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CONCHOLOGIA ICONICA:

OR,

ILLUSTRATIONS

OF THE

SHELLS OF MOLLUSCOUS ANIMALS.

VOL. V.

CONTAINING MONOGRAPHS OF THE GENERA

BULIMUS.

ACHATINA.

DOLIUM.

CASSIS.

TURRITELLA.

MESALIA.

EGLISIA.

CASSIDARIA.

ONISCIA.

EBURNA.

BY

LOVELL AUGUSTUS REEVE, F.L.S., F.Z.S.,

CORRESPONDING MEMBER OF THE NATURAL HISTORY SOCIETY OF WURTEMBERG ;

HONORARY MEMBER OF THE IPSWICH MUSEUM.

“ As the Snail whose tender horns being hit,
Shrinks backwards in his shelly cave with pain,
And there, all smothered up, in shade doth sit,
Long after fearing to creep forth again.”—*Shakspeare*.

LONDON:

REEVE, BENHAM, AND REEVE, KING WILLIAM STREET, STRAND.

1849.

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CONCHOLOGIA ICONICA:

ILLUSTRATIONS

OF THE

SHELLS OF MOLLUSCOUS ANIMALS.

VOL. V.

CONTAINING DESCRIPTIONS OF THE SPECIES

CASSIDARIA

CASSIS

BOLINUS

OSTREA

TURRITELLA

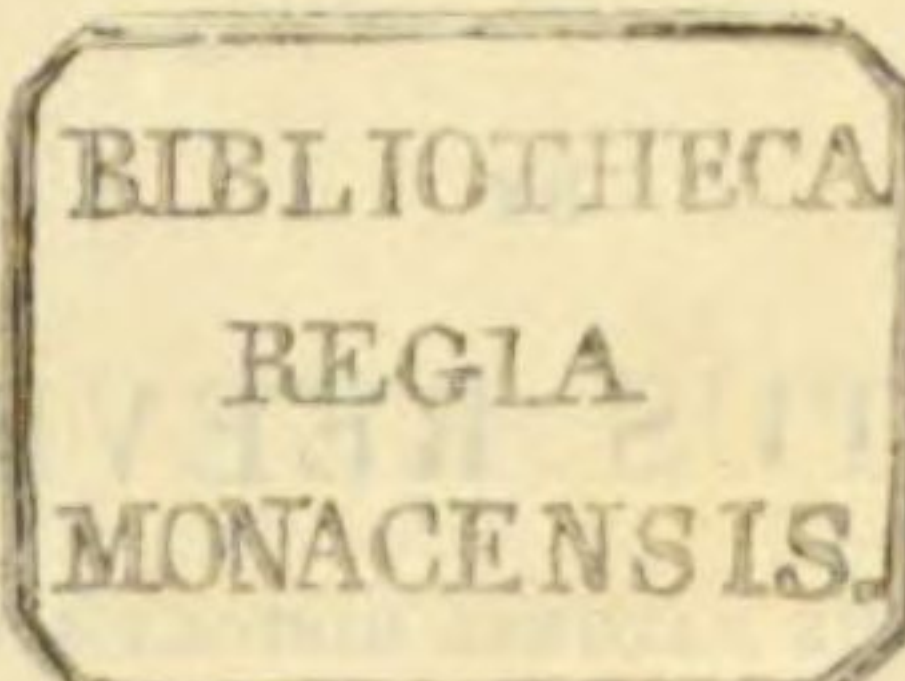
ACHATINA

EPURATA

HELIAS

BOHNI

BOHNI



LOVELL AUGUSTUS F.R.S.

PROFESSOR OF NATURAL HISTORY IN THE UNIVERSITY OF CAMBRIDGE

RESIDENT OF THE MUSEUM OF COMPARATIVE ZOOLOGY

As the work of the Museum of Comparative Zoology is now being published in the form of a series of volumes, it is hoped that the present volume will be found useful to the students of the Museum.

FOR SALE

BY THE AUTHOR, AND BY THE BOOKSELLERS, AND BY THE MUSEUM OF COMPARATIVE ZOOLOGY.

1842

6

104

MONOGRAPH
OF THE GENUS
B U L I M U S.

“The fertile bosom of the earth gives suck
To myriads, who still grow beneath her care,
Rewarding her with their pure perfectness.”—*Shelley*.

MONOGRAPH

OF THE GENUS

B. G. L. M. U. S.

The genus B. G. L. M. U. S. is a new genus of the family B. G. L. M. U. S. and is named in honor of the late B. G. L. M. U. S.



2. a.



1.



2. b.



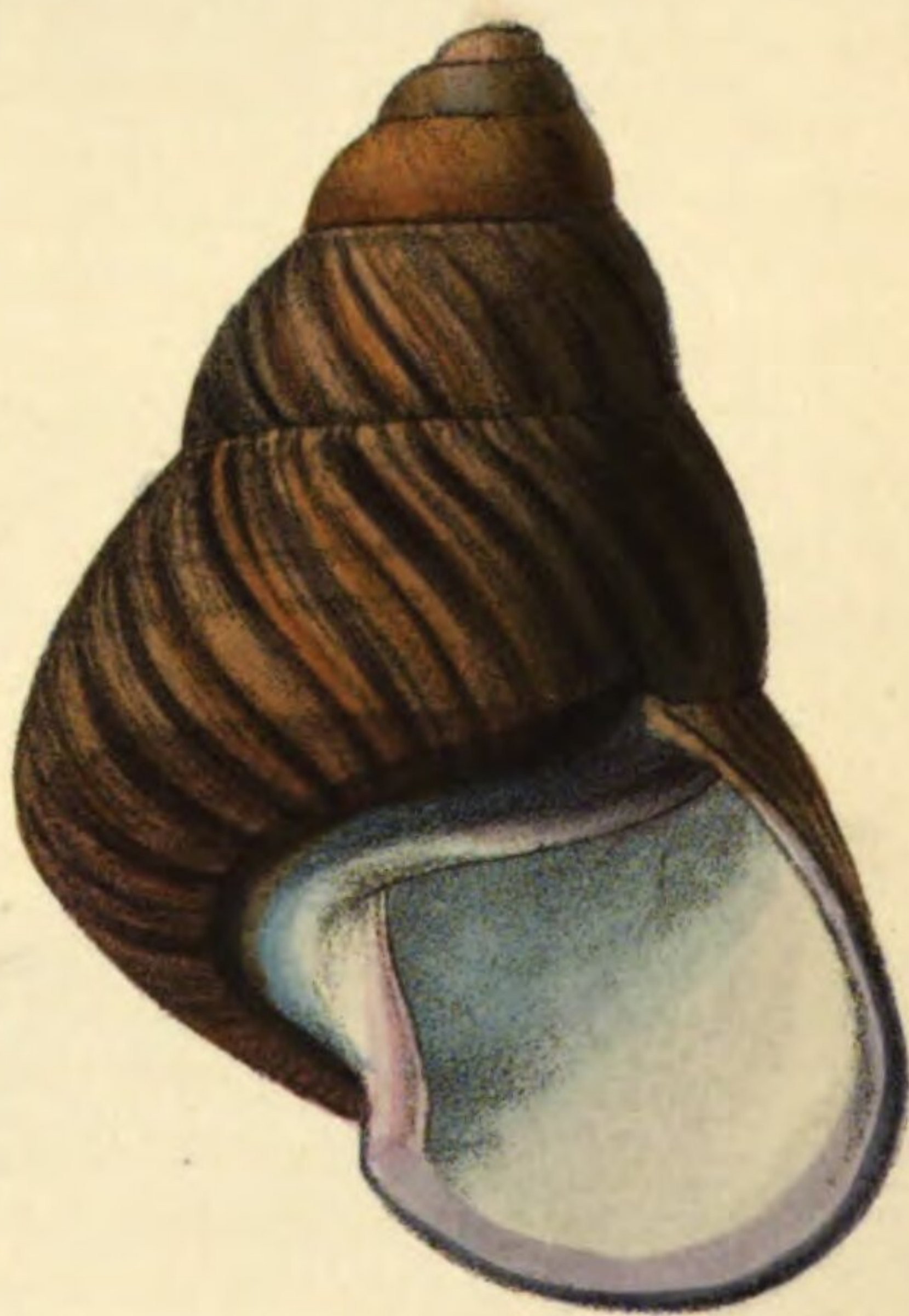
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5.

BULIMUS.

PLATE I.

Genus BULIMUS, Lamarck.

Testa ovata, vel oblonga, vel turrata, anfractibus nunc paucis, ventricosus, nunc plurimis, contractis, aut fragilibus et sæpè translucidis, aut crassiusculis, epidermide interdum duplici indutis; columellâ rectâ, interdum uniplicatâ, basi nunquam truncatâ; aperturâ nonnunquam dentatâ, plerumque integrâ, marginibus disjunctis, labro vel simplici, vel reflexo. Operculum nullum.

Shell ovate, oblong, or turreted, whorls sometimes very few and ventricose, sometimes many and contracted, either fragile and often transparent, or rather thick, covered with, sometimes, a double diaphanous epidermis; columella straight, sometimes one-plaited, never truncated at the base; aperture in some instances toothed, generally entire, with the margins disjoined, lip either simple or reflected.

The beautiful forms and varieties of shells produced by those air-breathing mollusks, which, under the generic appellation of *Bulimus*, constitute an important division of the great tribe of SNAILS, have become objects of especial interest to the conchologist, owing to the zeal with which a few enterprising scientific travellers have lately penetrated into tropical countries in pursuit of them. It is, however, to the productive exertions of Mr. Cuming that we are mainly indebted for the newer and more attractive subjects of the present monograph. The researches of this ardent naturalist in the arid plains on the west side of the Andes, in the dense woods of West Columbia and Central America, and, more recently, in the luxuriant open forests of the Philippine Islands, whilst they present an instructive contrast, exceed any result the most sanguine collector could have anticipated. In the dry and barren regions of Western Chili and Peru, the *Bulimi* are mostly small and of comparatively fragile structure; but in the beautiful islands of the Eastern Archipelago, where climate and vegetation combine to favour the growth of arboreal species, the genus is represented with prolific splendour. Mr. Cuming must have truly felt like one transported to the fabled garden of the Hesperides, when beholding the lofty trees of these sunny isles laden with snails of such magnificent proportions. Aladdin, in the Arabian tale, could not, surely, have contemplated the rich clusters of vari-coloured fruit in the garden of the African Magician with more astonishment, nor probably gathered it with more avidity.

"It was in 1836," relates Mr. Broderip, "that Mr. Cuming proceeded to the Philippine Islands by permission of the Queen Regent of Spain, and aided by powerful recommendations from her government, which opened to him the interior of the islands, and caused him to be received with a noble hospitality, equalled only by the warm interest which facilitated his pursuits wherever he arrived and made himself known." Species of which we had but an imperfect knowledge, in consequence of the bad condition in which a stray individual chanced to reach our cabinets, were found in luxuriant plenty, and many new kinds were discovered in their airy solitude in equal abundance. Had De Férussac, the enthusiastic admirer of this tribe, lived to see the glorious series of *Bulimi* accumulated in the Cumingian collection in different stages of growth, and in the finest state of preservation, from the egg to the adult, he would have been indeed amazed. Sorry am I that the limits of the present work will not allow me to illustrate more than two, or occasionally three, of the typical varieties of each species, and of these but a single view.

The genus *Bulimus*, as restricted by Lamarck, comprehends an extremely natural group, though presenting important differences of growth and texture; and these variations are peculiarly local. In the Philippine Islands, as just described, the species are of large and rather solid growth with a remarkable hydrophanous epidermis, that is, one permeable by water or other evaporable fluid. On the barren hills of Lima and the sandy plains of Chili and Peru, they are mostly small and delicately formed; in Brazil, the species are remarkable for having the aperture in frequent instances denticulated; and in New Caledonia, Venezuela, New Grenada, and New Hebrides, they not uncommonly exhibit, with equal peculiarity, a plaited *Auricula*-like columella.

It is a curious feature in the Philippine species that the varieties of pattern, which constitute their chief ornament, reside only in the epidermis. The colours of the shell rarely describe any sort of configuration: they are mostly blended into a uniform tint, over which a fanciful pattern is produced by the epidermis forming a double porous membrane in some places, and a single one only in others, developed, moreover, with the same continuous regularity as the textile marking of a Volute or Cone. This phenomenon is easily detected by immersing the shell in water, when the light portion or upper porous

layer of epidermis becomes saturated, and the ground colour of the shell is seen through it; as the moisture evaporates, the epidermis resumes its light appearance. Sir David Brewster, in reply to a letter from Mr. Broderip on this subject, says: "It appears to me, from very careful observations, that the epidermis consists of two layers, and that it is only the upper layer which is porous wherever the pattern is white. These white or porous portions of the epidermis differ from the other parts of the upper layer only in having been deprived of, or in never having possessed, the element which gives transparency to the membrane; in the same manner as hydropheous opal has become white, from the expulsion of its water of crystallization."

There is little variety in the animal of *Bulimus*: the Chilean species are mostly of a light colour, and a few in this and the Columbian district are spotted, some having a transparent shell through which the spots are visible. The Philippine species are, without exception, of a sombre olivaceous brown, and dwell in family groups, as it were, among the shady foliage of the branches. Out of a group of some dozen living specimens not more than three or four may be found in an adult state with the lip of the shell reflected. They may be dislodged by shaking the branches, but are chiefly disturbed by the heavy rains with which those islands are at times visited. Mr. Cuming preferred, however, to collect them in dry sunny weather, because he was sure of finding the objects of his search in their shady places of retreat. In the immense sandy tract on the west side of the Andes, the reverse of this condition of nature prevails. The *Bulimi* are here physically very distinct; some reside all the year round upon the numerous *Cacti*, but during the dry season, which lasts for several months, they mostly live in a state of torpor, inclosed within their shell by an epiphragm, and buried in the sand or under stones. On the approach of the dews, they revive to a state of animation, and crawl about at night in quest of food.

In illustration of the remarkable drought that prevails in Northern Chili, and of its effect upon molluscan life, I am tempted to repeat, in brief, an anecdote related to me by Mr. Cuming. On the arrival of our friend at the Port of Copiapo in 1829, he discovered the beautiful *Bulimus Broderipii* in considerable numbers, in the fissures of the rocks that may be seen here and there in the sandy plains of that country. Finding a large proportion of them dead, with the soft parts entirely decomposed, he requested a solitary inhabitant of the place to collect as many specimens as he could pick out alive whilst he occupied himself with botanizing. Returning from his

excursion, Mr. Cuming was greatly disappointed to find that among the quantity his Chilean collector had accumulated, there was scarcely one in a living state. Upon remonstrating with him for his inattention, the native replied: "Only wait till the dews come, and they will be all alive again." Mr. Cuming rejoined: "I suppose you mean when it rains." The man, however, in perfect astonishment inquired what he meant; though a sexagenarian, he had never heard of such a thing as rain.

The *Bulimi* vary in their mode of propagation: fragile species, with the lip of the shell simple, are mostly viviparous, whilst those with a reflected lip are oviparous. The arboreal species of the Philippines deposit their eggs in little clusters on the trees, between two leaves which the animal manages to curl up one upon the other, so as to form a receptacle for their protection; and, so far as Mr. Cuming's observations go, they are all soft like snake's eggs, with the single exception of the *B. Mindoroensis*, in which instance the eggs are calcareous, deposited upon the leaf in parallel rows, each standing perpendicularly on end, attached at the base by a glutinous substance.

The habits of the *Bulimi* in the two widely remote countries explored by Mr. Cuming, having been treated of in the foregoing remarks, it only remains to speak of them in other parts. Turning to New Holland we are unexpectedly surprised to find that the genus is represented to an extremely limited extent. I am not aware of more than three species having been found in this wide expanse of country, although several fine *Helices* have been discovered; and in a region of which the Fauna and Flora exhibit so luxuriant and distinctive a character, the scarcity of a genus of so much importance in the Eastern Isles is remarkable. The same observation applies to New Zealand, from whence, so far as the interior of the islands of that group has been visited, no more than one or two species have been received. In Africa the *Bulimi* are almost as great strangers as in the localities just spoken of; throughout the whole extent of land yet explored of this vast continent, scarcely a dozen species have been obtained. The *Bulimi* are here replaced by *Achatina*. Such a phenomenon may also be observed in some of the islands of the Pacific: in the Sandwich Islands the *Bulimi* are replaced by the genus *Achatinella*, and in the Society Islands their place is occupied by the *Partula*. In the West Indies the genera *Achatina* and *Glandina* seem to prevail. Howsoever abundant is the genus *Bulimus* in most of the islands of the Eastern Archipelago, few species appear to inhabit the great territories of India and China. On the coast of Borneo a beautiful species was

recently discovered by Mr. Adams, of H.M.S. Samarang, by the accidental falling of a huge tree, in a woody islet situated between Banguay and Balambangan, but they are of rare occurrence in that locality. In Europe, where nature is exposed to the vicissitudes of a colder climate, the *Bulimi* are mostly small and exhibit no brilliancy of colour. So also, in the extensive region of North America, where no more than a few insignificant species are known to exist. It is in the richly fertile and woody district of Columbia, that the genus *Bulimus* is represented with a magnificence little inferior to that of the Philippine Islands; here they are large enough and sufficiently abundant to be roasted and eaten by the aborigines as a frequent article of food. Several fine species, entirely new to science, have been collected in Venezuela and New Granada by Mr. Linden, an assiduous Botanical Traveller, only within the last twelvemonth, at an altitude of from 5000 to 8000 feet, and many more, no doubt, dwell in undisturbed solitude in the vast interior of this immense continent. It is extremely probable that a large portion of South America yet remains to be explored by the adventurous naturalist, where there is no doubt a fine expanse of forest country, grand in extent, rich in foliage, and possessing all the elements favourable to the growth and beauty of arboreal mollusks.

Species 1. (Mus. Cuming.)

BULIMUS MACROSTOMA. *Bul. testā ovali, ventricosā, spirā subabbreviatā, anfractibus senis, convexo-tumidis, concentricè striatis, columellā basi subcontortā; purpureo-fuscā, epidermide hydrophanā, in anfractu ultimo unizonatā, indutā; aperturā cærulescente-albā, labro reflexo.*

THE WIDE-MOUTH BULIMUS. Shell oval, ventricose, spire slightly abbreviated, whorls six in number, convexly tumid, concentrically striated, columella slightly twisted at the base; purple-brown, covered with a hydrophanous epidermis, marked with a single zone on the last whorl; aperture blueish white, lip reflected.

PFEIFFER, Pro. Zool. Soc., 1842, p. 152.

Hab. Sual, Province of Pangasinan, Island of Luzon, Philippines (on leaves of trees); Cuming.

This species approaches the *B. rufogaster*, it partakes of the same shades of colour, and the epidermis is characterised by a similar zone round the last whorl; it does not however exhibit the vacant patches beneath the sutures. The columella of *B. macrostoma* is slightly twisted, and

the general form of the shell is eminently distinguished by its swollen egg-shaped growth.

Species 2. (Fig. a and b. Mus. Cuming.)

BULIMUS PYTHOGASTER. *Bul. testā subpyramidalī-ovatā, anfractibus senis, plano-convexis, ultimo ventricosō, columellā rectā; purpureo-nigricante, epidermide interdum simplici, interdum longitudinaliter strigatā, aperturā cærulescente-albā, columellā rosaceo-purpurascēte.*

THE ORIENTAL BULIMUS. Shell somewhat pyramidally ovate, whorls six in number, flatly convex, the last ventricose, columella straight; purple-black, epidermis sometimes simple, sometimes arranged in longitudinal streaks, aperture blueish white, columella pinkish purple.

FERUSSAC, Lamarck, Anim. sans vert. vol. viii. p. 226.

Hab. Fig. a, Island of Ticao; Fig. b, Mount Isarog, Island of Luzon, Philippines (on leaves of trees); Cuming.

The examples of *B. pythogaster* selected for representation vary so materially in form, as well as in the arrangement of the epidermis, that one might consider them to belong to distinct species, were it not for the similarity in the structure and colouring of the aperture. In the specimen from Ticao, Fig. a, the shell is broader and more acutely ventricose at the base, and the epidermis is arranged in longitudinal streaks; in that from Luzon, Fig. b, the base is somewhat contracted, imparting a more pyramidal form to the shell, the apex is dark purple, and the epidermis is soft and velvety, uniformly distributed throughout without any description of pattern.

Species 3. (Mus. Cuming.)

BULIMUS LIGNARIUS. *Bul. testā ovato-conoideā, ventricosissimā, anfractibus senis, tumido-convexis; columellā rectā; purpureo-nigricante, epidermide lineis fasciisque in anfractu ultimo, et interdum penultimo, notatā; aperturā cærulescente-albā, columellā livido-purpurascēte.*

THE WOODEN BULIMUS. Shell ovately conoid, very ventricose, whorls six in number, tumidly convex; columella straight; purple-black, epidermis marked with bands or lines on the last and sometimes the penultimate whorl; aperture blueish-white, columella livid purple.

PFEIFFER, Pro. Zool. Soc., 1842.

Hab. Gattarang, Province of Cagayan, Island of Luzon, Philippines (on leaves of trees); Cuming.

This is the largest of the Philippine species, and that of the most ventricose proportions. The columella is of a livid blueish purple, and the epidermal pattern consists of a number of circular bands or lines, frequently extending around the last and penultimate whorls; the specimen figured, in which the bands are confined to the last whorl, is rather an exceptional variety.

Species 4. (Mus. Cuming.)

BULIMUS RUFOGASTER. *Bul. testā ovato-conoideā, sub-ventricosā, anfractibus senis, convexis, columellā sub-intortā; nigricante-purpureā, interdum rufescente, epidermide basin versus unifasciatā, strigis longitudinalibus nigricantibus, prope ad suturas latioribus, notatā, aperturā columellāque cærulescente-albidis.*

THE RED BULIMUS. Shell ovately conoid, somewhat ventricose, whorls six in number, convex, columella somewhat twisted; blackish purple, sometimes reddish, epidermis marked towards the base with a single band, and with dark longitudinal streaks, which are broader near the sutures, aperture and columella blueish white.

Hab. Province of Baie, Island of Luzon (in dark and lofty forests); Cuming.

In this species the columella is slightly twisted, and of the same blueish white hue as the interior of the shell. The pattern of the epidermis exhibits a single band round the lower part of the last whorl, and a row of broad, short, interrupted streaks around the sutures. This last mentioned design I have not observed in any other species.

Species 5. (Mus. Cuming.)

BULIMUS PHILIPPINENSIS. *Bul. testā ovato-conoideā, basi subplanulatā, anfractibus senis, convexis, ultimo basin versus subobscure angulato; columellā leviter intortā; nigricante-fuscā, epidermide in strigis oblique concentricis, aperturā cærulescente-albā, columellā pallidè rosaceo-purpurascente.*

THE PHILIPPINE BULIMUS. Shell ovately conoid, somewhat flattened at the base, whorls six in number,

convex, last whorl somewhat obscurely angled towards the base; columella slightly twisted; blackish-brown, epidermis disposed in obliquely concentric streaks, aperture blueish white, columella pale pinkish purple.

PFEIFFER, Pro. Zool. Soc., 1846.

Hab. Islands of Luzon and Marinduque, Philippines (on the leaves of trees); Cuming.

There is little to distinguish this species from the *B. pythogaster*; it has a somewhat angular inclination of growth around the lower part, but this is not a character to which much importance can be attached, seeing that the typical varieties above figured of that species present almost as great a difference of form.

Species 6. (Mus. Cuming.)

BULIMUS REEVII. *Bul. testā oblongo-ovatā, anfractibus senis, tumidiusculis, ultimo ventricosus, effusus; intensè ustulato-fuscā, epidermide in fasciis insignibus latiusculis remotis lineisque subtilibus, aperturā cærulescente-albā, columellā vix intortā, peritremate livido-purpurascentibus.*

REEVE'S BULIMUS. Shell oblong-ovate, whorls six in number, rather swollen, last whorl ventricose and effused; rich burnt-brown, with the epidermis in remarkable rather broad bands and fine lines, aperture blueish white, columella scarcely twisted, and, together with the peritreme, of a livid purple hue.

CUMING, MSS., Mus. Cuming.

Helix Reevei, Broderip, Pro. Zool. Soc., 1841.

Hab. Luhban, Province of Tayabas, Island of Luzon, Philippines (on the leaves of trees); Cuming.

This is the first species of *Bulimus*, and I believe the first shell, which Mr. Cuming unpacked from his vast collection on his return from the Philippines, and, being present at this exciting moment, I shall not easily forget the impression caused by the sight of so superb an example of an arboreal Snail. The remarkable disposition of the epidermis was quite a matter of astonishment, nothing of the kind had been observed before, nor had any specimen of the *B. pythogaster* been collected in a state of preservation by which this phenomenon could be understood.



7. a.



7. b.



8. a.



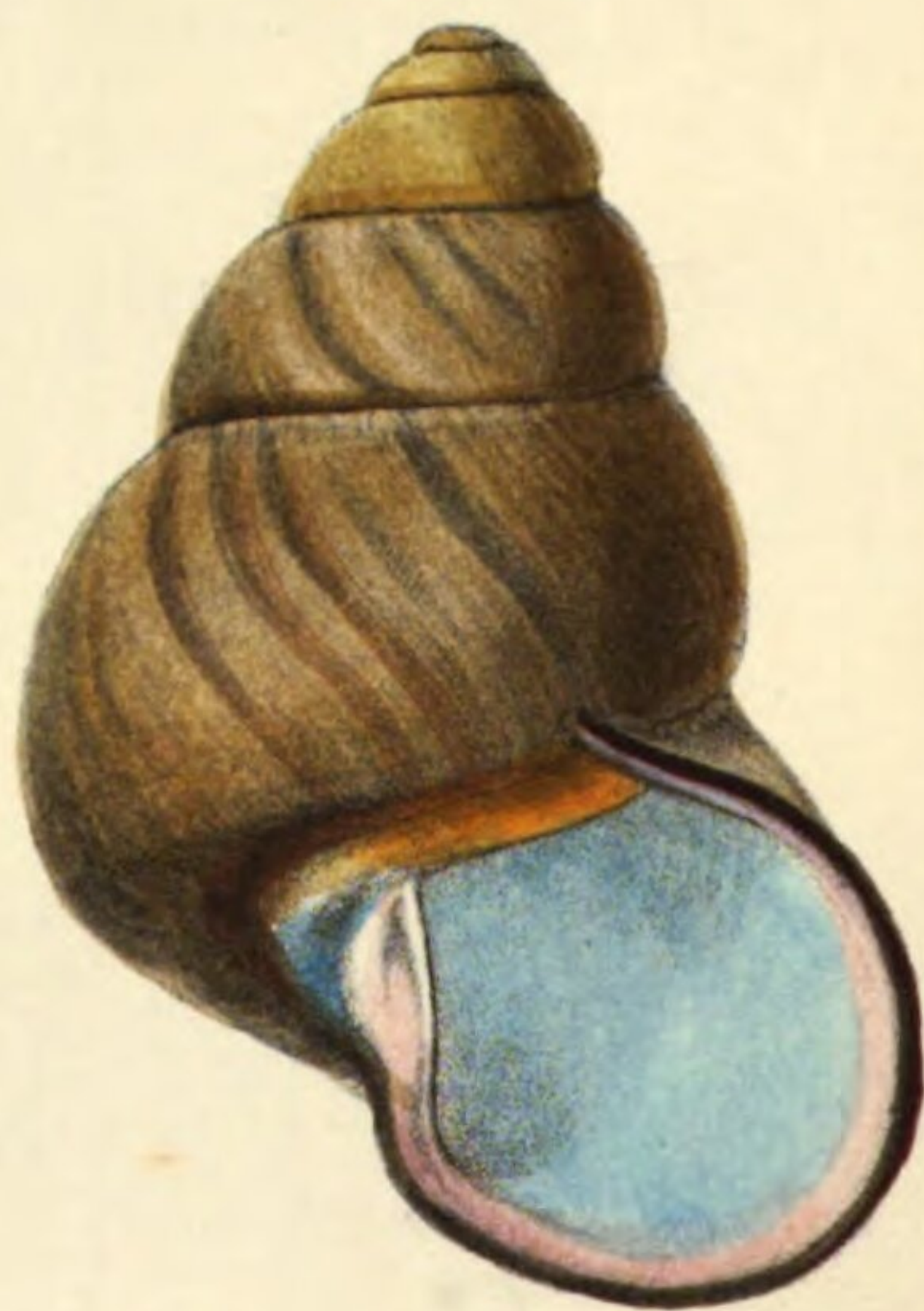
9.



8. b.



10.



8. c.

BULIMUS.

PLATE II.

Species 7. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS GILVUS. *Bul. testā subglobosā, apice obtusā, anfractibus senis, rotundatis, concentricè striatis, aperturā subcontractā, columellā vix curvatā; gilvā vel ustulato-rufā, anfractu ultimo obscure unifasciato, epidermide simplici indutā, peritremate collumellāque livido-albis.*

THE BRICK-COLOURED BULIMUS. Shell somewhat globose, obtuse at the apex, whorls six in number, rounded, concentrically striated, aperture rather contracted, columella slightly curved; brick-coloured or burnt-red, last whorl encircled with an obscure band, covered with a simple epidermis, peritreme and columella livid-white.

SOWERBY, Pro. Zool. Soc., 1845, p. 45.

Hab. Island of Bohol, Philippines (on the leaves of trees); Cuming.

The specimens of *B. gilvus* figured give a tolerable idea of the varieties of the species, which only affect the shell so far as the depth of colour and thickness of the epidermis are concerned. The last whorl exhibits an obscure band round the lower part, and the concentric striæ are rather prominently developed, but there is no epidermal pattern or configuration. The livid-white peritreme and columella are rather a characteristic feature in the species. It appears to be confined to the Island of Bohol.

The *B. gilvus*, it will be observed, partakes much more of the character of *Helix* than the following, which Mr. Broderip refers to that genus according to the method of De Férussac.

Species 8. (Fig. *a*, *b*, and *c*. Mus. Cuming.)

BULIMUS DAPHNIS. *Bul. testā pyramidalī ovatā, anfractibus senis, convexis, plus minus ventricosis, aperturā subcontractā, columellā subrectā; nigricante-purpureā spadiceāque, epidermide vel simplici, vel in strigis longitudinalibus, vel in fasciis lineisve transversis; columellā roseo-purpureā, aperturā cærulescente-albā, peritremate nigricante-purpureā.*

THE DAPHNIS BULIMUS. Shell pyramidal, ovate, whorls six in number, convex, more or less ventricose, aperture somewhat contracted, columella nearly straight; blackish purple or fawn colour, epidermis either simple or disposed in longitudinal streaks or transverse bands and lines, columella pinkish purple, aperture blueish white, peritreme blackish purple.

Helix (Cochlostyla) Daphnis, Broderip, Pro. Zool. Soc., 1840, p. 180.

Hab. Fig. *a*, Island of Siquijor; Fig. *b*, Argao, Island of Zebu; Fig. *c*, San Nicolas, Island of Zebu, Philippines (on the trees); Cuming.

Of the varieties of this charming species it may be said their name is legion, all remarkable for their neatness and alike worthy to sustain the rural dignity of the pastoral shepherd and poet whose name they bear. Of the specimens selected for representation, one has the epidermis disposed in transverse bands, another in concentric streaks, whilst in the third it is without any indication of pattern; and it may be observed that they vary even in form. In the most important part of the shell, the aperture and columella, they resemble each other perfectly, and not the least permanent character of the species resides in the pinky colouring of those parts.

Species 9. (Mus. Cuming.)

BULIMUS SOLIDUS. *Bul. testā oblongā, subelongatā, anfractibus septenis, ultimo basin versus obsoletissimè angulato; columellā subintortā; nigricante-purpureā, epidermide in strigis longitudinalibus, confertis, irregularibus, aperturā cærulescente, peritremate nigricante-purpureā.*

THE SOLID BULIMUS. Shell oblong, somewhat elongated, whorls seven in number, the last very obsoletely angled towards the base; columella slightly twisted; blackish-purple, epidermis in close-set irregular longitudinal streaks, aperture blueish, peritreme blackish-purple.

PFEIFFER, Pro. Zool. Soc., 1842, p. 152.

Hab. San Juan, Province of Cagayan, Island of Luzon, Philippines (on leaves of trees); Cuming.

This species, of which Mr. Cuming collected only a few specimens, is of an elongately oblong form, and composed of one more whorl than any of the preceding; it is of rather dark colour, and the longitudinal streaks of epidermis are very irregular and close-set. There is a variety in which the last whorl is more inflated and has a whitish band.

The name devoted to this species is rather an inappropriate one, the shell being of no more solid growth than its congeners.

April, 1848.

Species 10. (Mus. Cuming.)

BULIMUS MUS. *Bul. testā ovatā, crassiusculā, spirā obtusā, anfractibus quinis, subrotundatis, columellā subintortā; intensè castaneā, epidermide albicante, lineis subtilibus concentricis hic illic interruptā; columellā lacteā, peritremate intensè castaneā.*

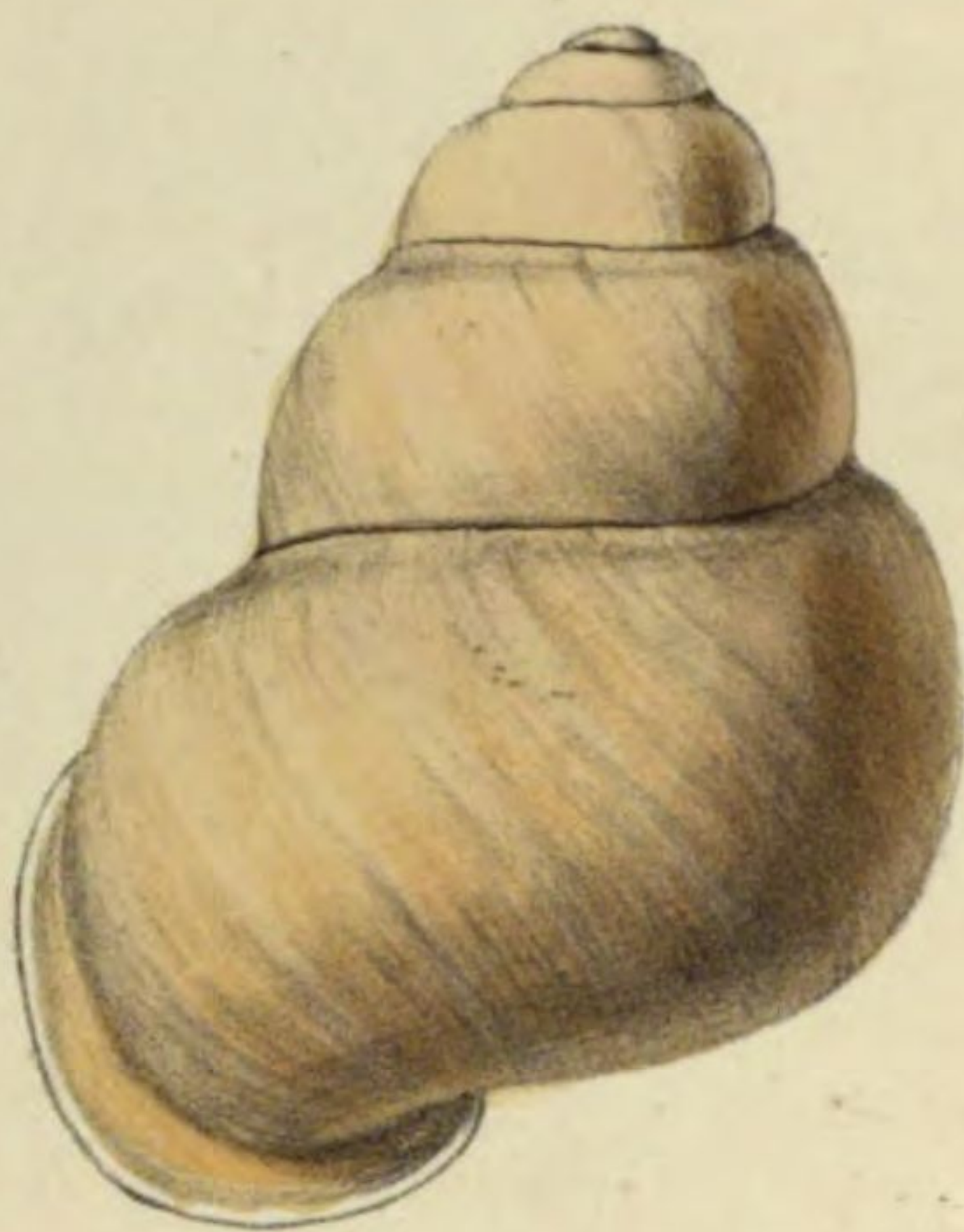
THE MOUSE BULIMUS. Shell ovate, rather thick, spire obtuse, whorls five in number, somewhat rounded, columella slightly twisted; deep chesnut, epidermis whitish, interrupted here and there with fine lines, columella milk-white, peritreme deep chesnut.

Hab. Banang, Province of Pangasinan, Island of Luzon (on trees); Cuming.

The preceding species, it may be observed, consists of a whorl more than its congeners from the Philippine Islands; this, on the contrary, is shorter and composed of a whorl less. It is of an extremely rich chesnut colour, covered by an epidermis delicately white, and only interrupted here and there by fine lines. The columella does not partake of the colour of the peritreme, being of a clear milk-white.



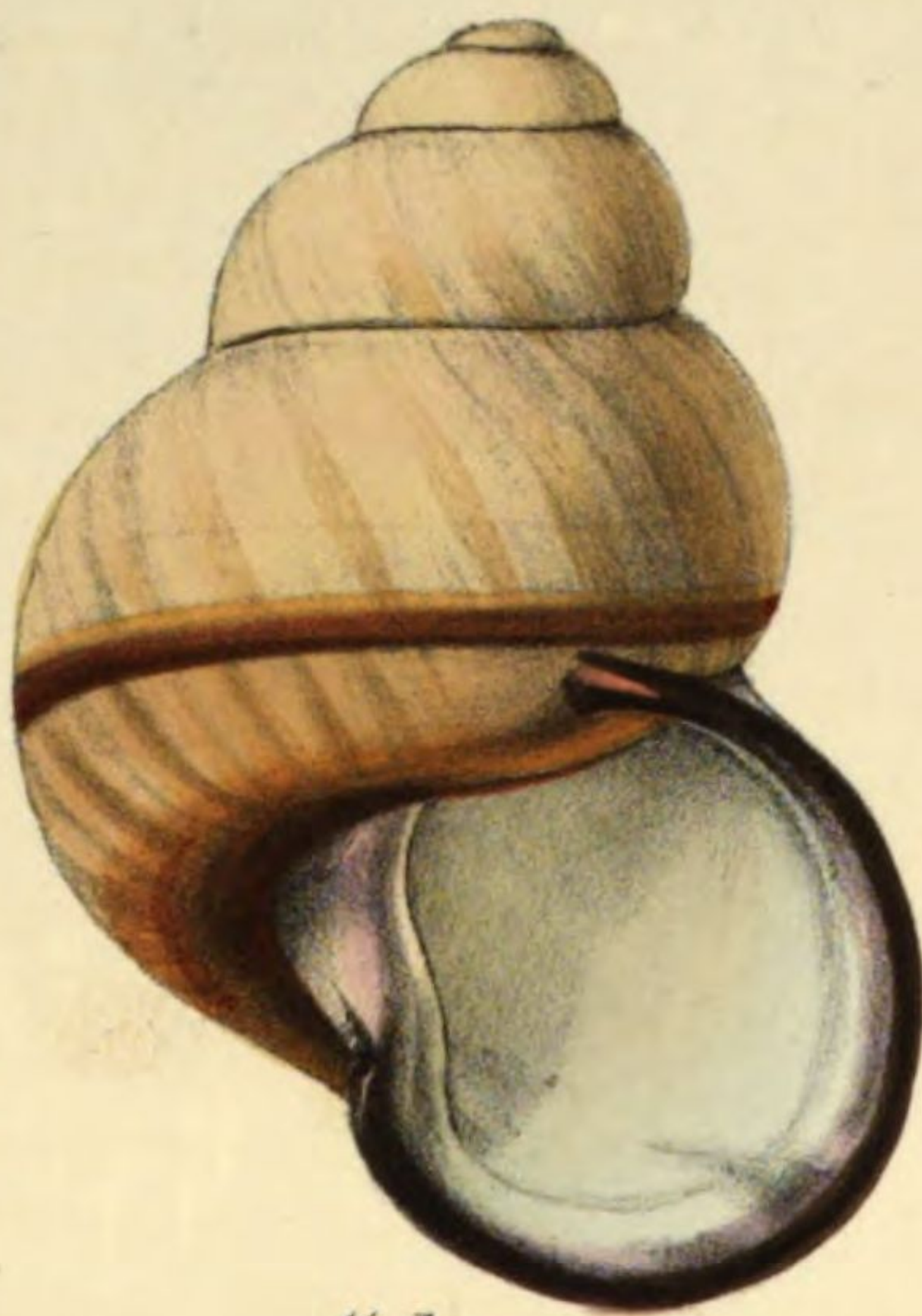
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11. a.



13.



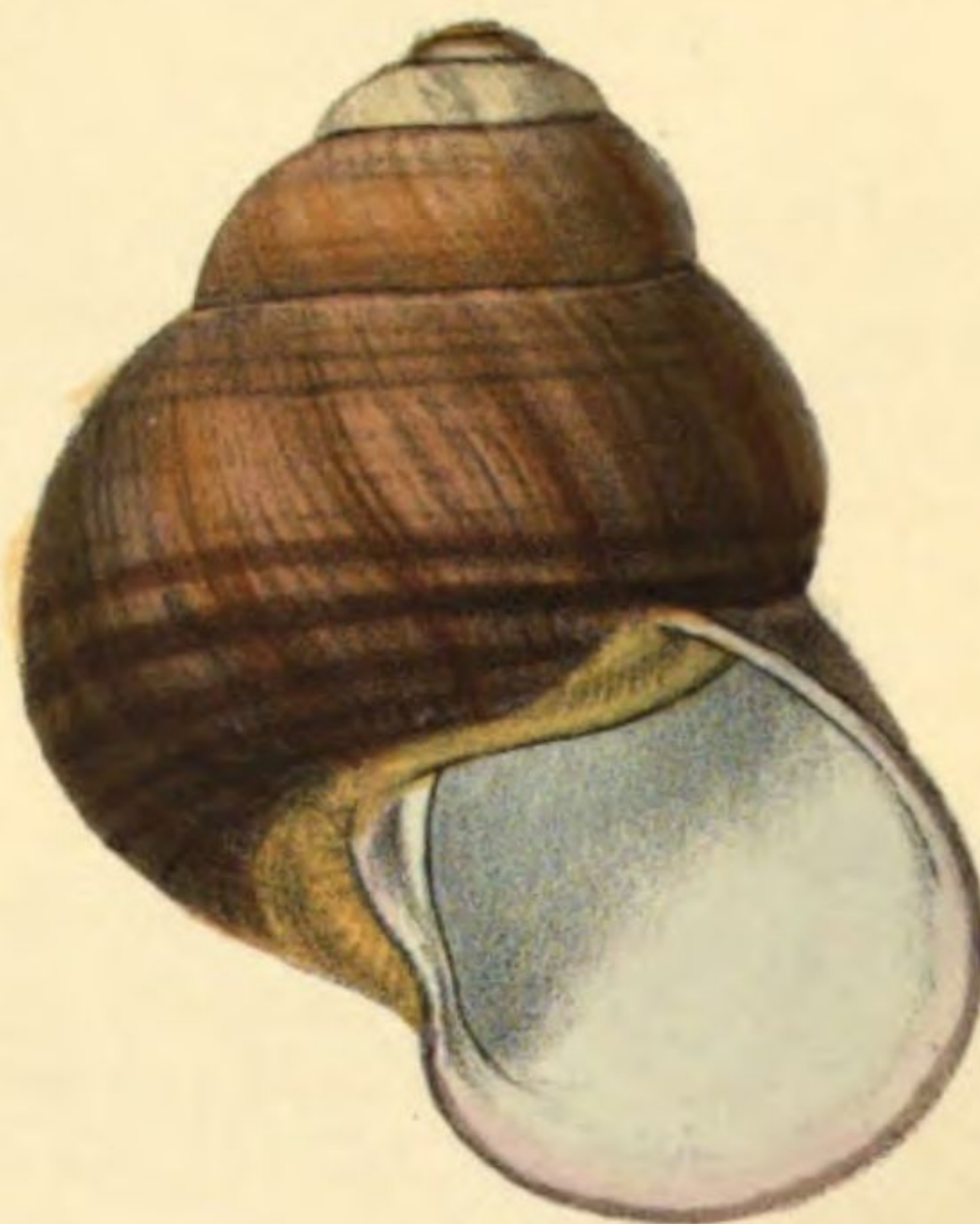
11. b.



14. a.



14. c.



14. b.

BULIMUS.

PLATE III.

Species 11. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS WOODIANUS. *Bul. testā ovato-conoideā, basi peculiariter concavā, anfractibus quinis subrotundis, suturis impressis, columellā vix intortā; albā, epidermide luteā tenuissimā nitidā indutā, anfractu ultimo ustulato-fusco tincto, conspicuè unifasciato, columellā rosaceo-purpurascēte, peritremate et circa columellam intensè nigricante-castaneis.*

WOOD'S BULIMUS. Shell ovately conoid, peculiarly concave at the base, whorls five in number, somewhat round, sutures impressed, columella slightly twisted; white, covered with a very thin yellow shining epidermis, last whorl stained with burnt brown and conspicuously single banded, columella pinkish purple, peritreme and around the columella deep blackish chesnut.

LEA, Trans. Acad. Nat. Sc. Philadelphia, 1840, pl. xi. f. 5.
Hab. Island of Romblon, Philippines (on the trees); Cuming.

This species is of a character singularly distinct from the rest of its congeners of the Philippine Isles. No pattern is discernible in the epidermis, which is merely a thin transparent horny layer, nor is there any colour in the shell until it approaches maturity. The specimen represented at Fig. 11. *a* is entirely colourless; that at 11. *b* has a burnt brown hue upon the last whorl, which is further distinguished by a dark band and intensely dark chesnut-stained peritreme.

Species 12. (Mus. Cuming.)

BULIMUS JUGLANS. *Bul. testā ovatā, crassiusculā, anfractibus quinis, rotundato-tumidis, obliquè striatis, aperturā subcontractā, columellā introrsum arcuatā; intensè rufo-castaneā, epidermide tenuiculā, spiraliter lineatā, aperturā peritremate et columellā livido-cærulescentibus.*

THE WALNUT BULIMUS. Shell ovate, rather thick, whorls five in number, rotundately tumid, obliquely striated, aperture slightly contracted, columella curved inwards; deep reddish chesnut, epidermis rather thin, spirally lineated, aperture peritreme and columella pale livid blue.

PFEIFFER, Pro. Zool. Soc., 1842. p. 89.

Hab. Mountains of Igarrotes, northern extremity of the Island of Luzon, Philippines (on leaves of trees); Cuming.

A rather scarce species of solid growth, and of a deep crimson brown colour. The aperture is somewhat contracted, and there is a peculiar twist in the columella. The epidermis is rather slight, disposed in spiral lines.

Species 13. (Mus. Cuming.)

BULIMUS FAUNUS. *Bul. testā subpyramidal-ovatā, crassiusculā, anfractibus senis, subconvexis, columellā vix rectā; castaneo-fuscā, epidermide simplici, fumo-fuscā, maculis paucis nigricantibus prope suturas exhibentibus, aperturā cærulescente-albā, columellā rosaceo-purpurascēte, peritremate nigricante.*

THE FAWN BULIMUS. Shell somewhat pyramidally ovate, rather thick, whorls six in number, slightly convex, columella nearly straight; chesnut-brown, epidermis simple, smoky-brown, exhibiting a few blackish spots next the sutures, aperture bluish-white, columella pinkish-purple, peritreme blackish.

Helix (Cochlostyla) Faunus, Broderip, Pro. Zool. Soc., 1840. p. 180.

Hab. San Nicolas, Island of Zebu (on the trees); Cuming.

Of a firm pyramidal growth, singularly characterized by a row of irregular small spots around the sutures.

Species 14. (Fig. *a, b, c*. Mus. Cuming.)

BULIMUS TICAONICUS. *Bul. testā subgloboso-ovatā, apice obtusā, anfractibus quinis, rotundatis, columellā subarcuatā; castaneo-rufā aut flavicante, epidermide in floccis strigisve subdistantibus conspicuis, aut simplici aut spiraliter lineatā, columellā rosaceo-purpurascēte, peritremate purpureo-castaneā, nonnunquam pallidā.*

THE TICAON BULIMUS. Shell somewhat globosely ovate, obtuse at the apex, whorls five in number, rounded, columella slightly arched; chesnut-red or pale yellow, with the epidermis in conspicuous, rather distinct flakes or streaks, or simple or spirally lineated, columella pinkish-purple, peritreme purple-chesnut, sometimes pale.

Helix (Cochlostyla) Ticaonica, Broderip, Pro. Zool. Soc. 1840.

Hab. Island of Ticao, Philippines (in the woods); Cuming.

This species, like the *B. Daphnis* of the Island of Zebu, is an extremely variable one, assuming numerous styles of pattern and colour, as may be noticed by the contrast afforded in the specimens selected for representation. All are, however, distinguished by their globose form, and by the important delicate pink colouring of the columella.



16. a.



15.



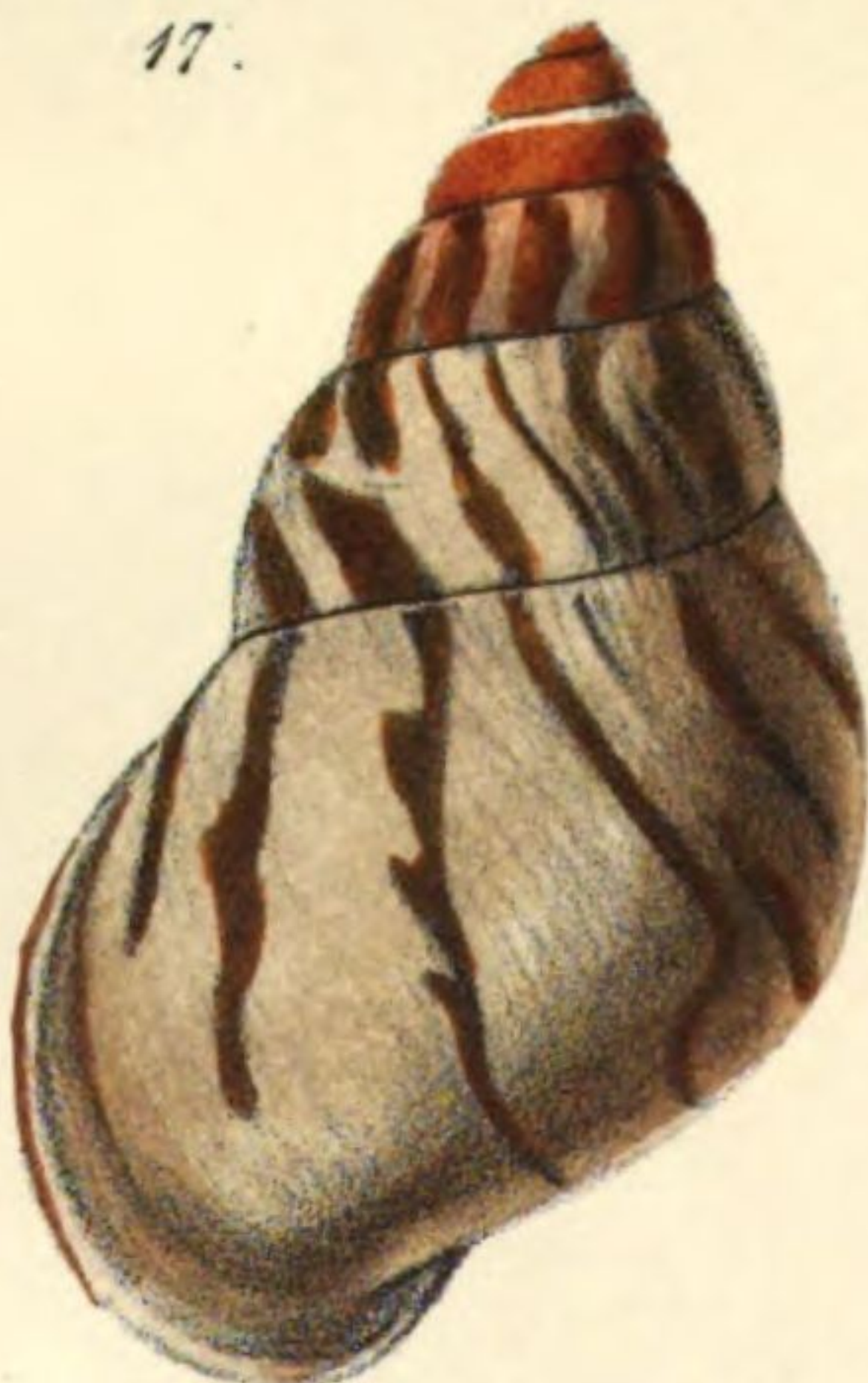
16. b.



17.



18.



19. b.



19. a.

BULIMUS.

PLATE IV.

Species 15. (Mus. Cuming.)

BULIMUS MINDOROENSIS. *Bul. testā cylindraceo-oblongā, anfractibus senis, convexis, columellā subarcuatā; fusco-nigricante aut rufescente, epidermide in strigis conspicuis subdistantibus, aperturā cærulescente-albā, peritremate effusā, intensè fusco-nigricante.*

THE MINDORO BULIMUS. Shell cylindrically oblong, whorls six in number, convex, columella slightly arched; brownish black or reddish, with the epidermis in conspicuous, rather distant, longitudinal streaks, aperture bluish white, peritreme effused, deeply stained with brown-black.

BRODERIP, Pro. Zool. Soc., 1840. p. 84.

Hab. Puerto Galero, Philippine Islands (on the leaves of trees); Cuming.

The epidermal pattern of this species is characteristic, consisting of numerous conspicuously marked longitudinal streaks, which in parts are somewhat distant from each other. The aperture in most of the species is comparatively rather small, and the lip in all is effused rather than reflected back.

I cannot quite agree in the varieties noted by Mr. Broderip, some of which are too nearly alike to make it worth while to mark a distinction, whilst there is one which appears to me of so different a character, that it should be regarded as another species, see Plate V. Sp. 20.

Species 16. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS CHRYSALIDIFORMIS. *Bul. testā cylindraceo-oblongā, medio ventricosiore, anfractibus septenis, subplano-convexis, columellā subintortā, aperturā parviusculā; intensè rufo-castaneā, epidermide in fasciis latiusculis, longitudinalibus, undatis, vel flavescente, epidermide sub fasciā rufo-fuscā infra suturas eximie tessellatā, peritremate intensè castaneā.*

THE CHRYSALIS-SHAPED BULIMUS. Shell cylindrically oblong, more ventricose in the middle, whorls seven in number, rather flatly convex, columella slightly twisted inwards, aperture somewhat small; deep reddish chesnut colour, with the epidermis in rather broad longitudinal waved streaks, or yellowish, with the epidermis delicately tessellated upon a reddish brown band beneath the sutures, peritreme deep chesnut brown.

SOWERBY, Pro. Zool. Soc., 1833. f. 37. Conch. Illus. *Bulimus*, f. 28.

Hab. Fig. 16 *a*, Mansalai, Island of Mindoro. Fig. 16 *b*, Puerto Galero, Philippines (in dark forests of thick foliage, upon and beneath the leaves); Cuming.

The *Bulimus chrysalidiformis* described by Mr. Sowerby, prior to Mr. Cuming's voyage to the Philippine Islands, from a pale uncoated specimen, is mainly distinguished by its elongately cylindrical form, the aperture being comparatively rather small, and a little distorted from the twisting of the columella. The yellow variety represented at Fig. 16 *a*, is very remarkable, and appears, at first sight, to differ materially from the type of the species, which approaches rather to *B. Mindoroensis*.

Species 17. (Mus. Cuming.)

BULIMUS NIMBOSUS. *Bul. testā pyramidal-oblongā, spirā acuminatā, anfractibus septenis, convexis, columellā arcuatā; intensè brunneā, epidermide in floccis latis subdistantibus undatis, aperturā cærulescente-albā, peritremate brunneā.*

THE RAINY BULIMUS. Shell pyramidally oblong, spire acuminate, whorls seven in number, convex, columella arched; deep brown, with the epidermis in broad, rather distant, wavy flakes, aperture bluish white, peritreme brown.

BRODERIP, Pro. Zool. Soc., 1840, p. 121.

Hab. Island of Negros (on the summits of the mountains); Cuming.

A fine dark brown species of a pyramidally acuminate form, with the epidermis disposed in light longitudinally waved flakes. Mr. Broderip's variety *d* has always appeared to me so constantly distinct from this, that I propose to elevate it to the rank of a species, in compliment to my friend, Dr. Pfeiffer.

Species 18. (Mus. Cuming.)

BULIMUS PFEIFFERIANUS. *Bul. testā oblongo-ovatā, subventricosā, anfractibus senis, tumidiusculis, columellā subarcuatā; flavo-viridescente, epidermide in strigis longitudinalibus undatis, columellā et aperturā cærulescente-albis, peritremate et parte circa columellam, nigricante-fuscis.*

April, 1848.

PFEIFFER'S BULIMUS. Shell oblong-ovate, rather ventricose, whorls six in number, somewhat swollen, columella slightly arched; pale yellowish green, with the epidermis in longitudinally waved streaks, columella and aperture bluish white, peritreme and the part round the columella blackish brown.

Bulimus nimbosus, var. *d*, Broderip.

Hab. Tankay, Island of Negros (on the branches); Cuming.

I have long regarded this shell in my own mind as a species distinct from *B. nimbosus*; it is composed of one whorl less, is constantly more ventricose, less pyramidally acuminate, and always distinguished by a pale yellowish-green cast of colour with a dark chesnut blotch, nearly black, around the columella, and there is a peculiarity also in the arrangement of the epidermis.

To Dr. Pfeiffer, of Cassel, I dedicate this beautiful species, trusting he will appreciate my desire to do him honour for the service he has rendered to conchological science by his laborious investigation of the great tribe of *Helicidae* of which the present genus forms a part.

Species 19. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS PICTOR. *Bul. testā acuminato-oblongā, anfrac-*

tibus senis, convexis, columellā subrectā; intensè brunneā, epidermide plus minusve albā, fasciis angustis longitudinalibus undatis, interdum interruptis, prætermittente, aperturā cærulescente, peritremate nigricante-castaneo marginatā.

THE PAINTER BULIMUS. Shell acuminate oblong, whorls six in number, convex, columella nearly straight; rich brown, epidermis more or less white, leaving narrow longitudinally waved dark bands, which are sometimes interrupted, aperture bluish white, peritreme edged with blackish chesnut.

BRODERIP, Pro. Zool. Soc., 1840, p. 120.

Hab. Dingle, Province of Ilo Ilo, Island of Penang, Philippines (on the trees); Cuming.

A richly coloured species, with the epidermis so deposited as to leave a dark, longitudinal, zig-zag stripe at intervals, which is occasionally broken or otherwise interrupted, and has a striking appearance from the epidermis being of a thick, opaque-white, satiny hue down one side. The aperture is of clear milky white, and the peritreme is peculiar in having the usual dark colouring matter quite at the edge.



20. l.



20. a.



21.



22.



23. a.



23. c.



23. b.

BULIMUS.

PLATE V.

Species 20. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS NOBILIS. *Bul. testā acuminato-oblongā, anfractibus quinis senisve, subplano-convexis, suturis impressis, columellā rectiusculā; virescente-flavidā, epidermide tenui, zonulas albas sinuatas, longitudinales, nunc distantes, nunc interruptas, exhibente, anfractu ultimo fasciā angustā nigricante-fuscā parte inferiore cingulato, circa columellam nigricante, peritremate albā.*

THE NOBLE BULIMUS. Shell acuminate oblong, whorls five or six in number, somewhat flatly convex, sutures impressed, columella rather straight; greenish yellow; epidermis thin, exhibiting longitudinally sinuated opaque white zones, sometimes interrupted, sometimes rather distant, last whorl with a narrow dark brown band round the lower part, blackish around the columella, peritreme white.

Hab. Mountains of Igbaras, Island of Luzon, Philippines (on the trees); Cuming.

The markings of this beautiful species are similar to those of the *B. fulgetrum*, the epidermis being thin, excepting where it is disposed in striking lightning-like streaks, darting, so to speak, out of the sutures; in form the shell is constantly distinct, and it is further characterized by a conspicuous dark band.

Species 21. (Mus. Cuming.)

BULIMUS ELECTRICUS. *Bul. testā subelongato-ovatā, medio ventricosiore, spirā acuminatā, anfractibus senis, subplano-convexis, columellā leviter intortā; livido-rufā, epidermide tenuiculā, strigas pallidas obliquè undatas, valdè irregulares, exhibente, aperturā albidā, peritremate rufo-fuscā.*

THE ELECTRIC BULIMUS. Shell somewhat elongately ovate, more ventricose in the middle, spire acuminate, whorls six in number, rather flatly convex, columella slightly twisted; livid red, epidermis rather thin, exhibiting very irregular obliquely waved pale streaks, aperture whitish, peritreme reddish brown.

Bulimus Mindoroensis, var. *k*, Broderip.

Hab. Puerto Galero, Island of Mindoro, Philippines (on the leaves of trees); Cuming.

If any importance is to be attached to the character and pattern of the epidermis of these shells, there is certainly enough to distinguish this from the *B. Mindoroensis*.

The epidermis is of a soft, very slight texture, of a uniform reddish brown tint in which light streaks descend here and there from the sutures in very zigzag course, somewhat as in *B. fulgetrum* but fainter; and, besides this, the shell is of a more acuminate growth, whilst the last whorl is larger and more effused.

Species 22. (Mus. Cuming.)

BULIMUS BICOLORATUS. *Bul. testā pyramidalī, anfractibus septenis, leviter convexis, columellā subintortā; rufo-brunnēā, subtus viridi, epidermide in strigis latiusculis longitudinalibus medio peculiariter interruptis, et infernè bifasciatā, peritremate columellāque intensè nigro-fuscis.*

THE TWO-COLOURED BULIMUS. Shell pyramidal, whorls seven in number, slightly convex, columella slightly twisted; reddish-brown, green beneath, epidermis in rather broad longitudinal bands, peculiarly interrupted in the middle, and two-banded round the lower part, peritreme and columella deep black-brown.

LEA, Trans. Amer. Phil. Soc., vol. vii. p. 459. pl. 11. f. 8. *Bulimus Alberti*, Broderip.

Hab. Mount Isarog, Province of Camarinas; and Calanang, Province of Baie, Island of Luzon, Philippines (on the trees); Cuming.

A truly beautiful species, remarkable for its pyramidal growth, and original display of colouring. None of the preceding species have any indication of the bright green which distinguishes the under portion of the body-whorl in this, and the epidermal pattern is equally peculiar.

The shell described by Mr. Broderip under the name of *B. onyx* appears to be only another state of this, inhabiting the same locality in more lofty situations in the trees. It should be observed that Mr. Cuming collected but two specimens, one in bad condition, the other of immature growth. They are of a singular pupiform shape, but are so nearly allied to the *B. bicoloratus* in other respects, that the species must be received with caution until further and better means of comparison can be obtained.

The honour intended by the dedication of this finest of the Philippine species, to be conferred on H.R.H. Prince Albert, whose interest in Conchology is handsomely testified by his patronage of the present work, was uncon-

sciously intercepted in the present instance by Mr. Lea of Philadelphia.

Species 23. (Fig. *a*, *b*, and *c*. Mus. Cuming.)

BULIMUS FULGETRUM. *Bul. testā oblongo-ovatā, subven-
tricosā, anfractibus quinis, ultimo majusculo, columellā
vix arcuatā; ustulato-fuscā et flavicante, epidermide
in strigis albis opacis variè undatis, subdistantibus,
peritremate albā.*

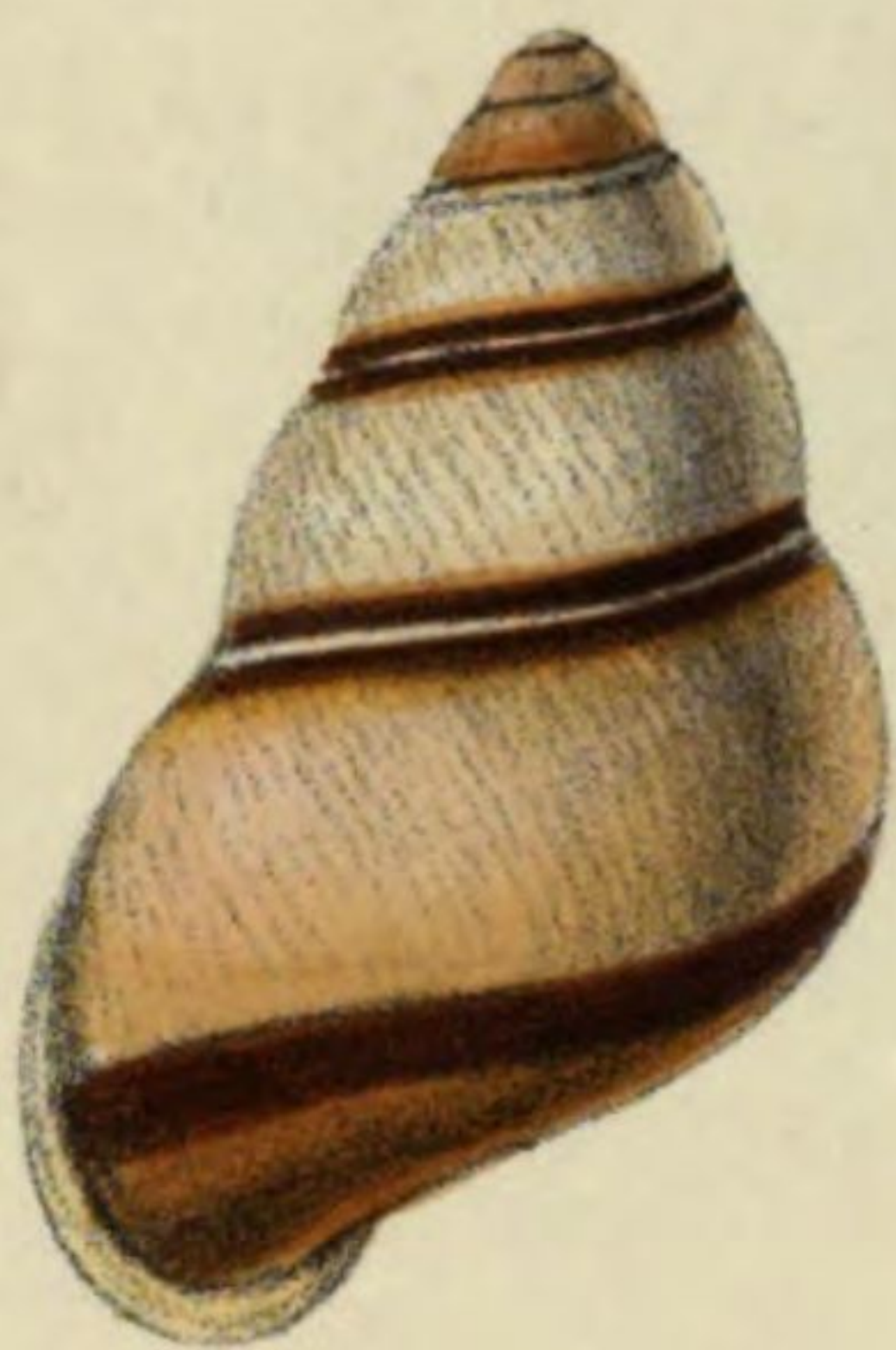
THE LIGHTNING-MARKED BULIMUS. Shell oblong-ovate,
somewhat ventricose, whorls five in number, last
whorl rather large, columella slightly curved; burnt-

brown or yellowish, with the epidermis in rather
distant variously waved opaque white streaks, peri-
treme white.

BRODERIP, Pro. Zool. Soc., 1840., p. 119.

Hab. Island of Negros, Philippines (on the trees); Cuming.

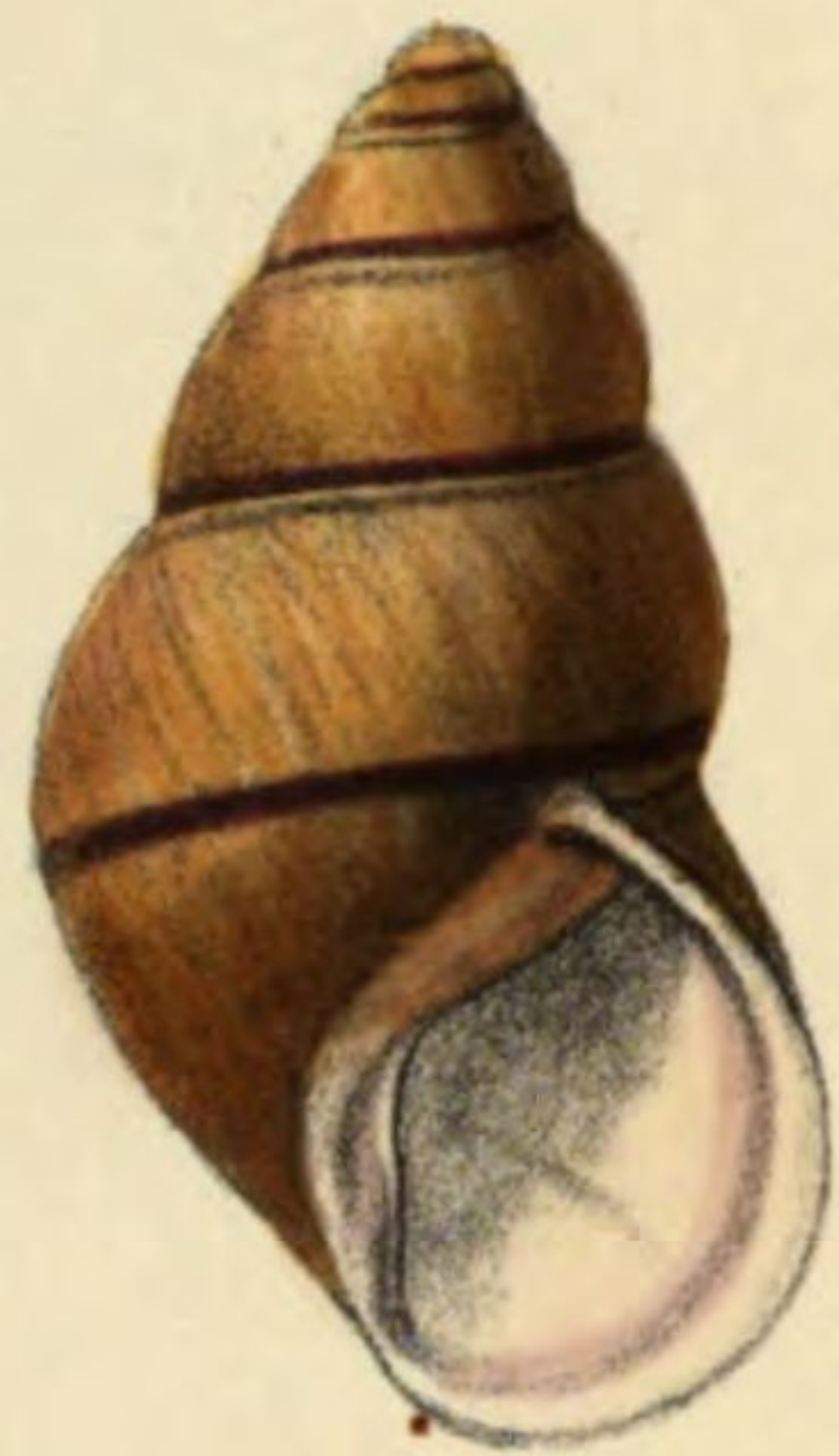
Of all the species collected by Mr. Cuming at the
Philippine Islands, this has, perhaps, most excited the
admiration of amateurs. The electrical flashes, so to
speak, of light satiny epidermis which descend from the
sutures are peculiarly striking, and unlike anything that
had been seen before. The ground colour of the shell
varies from a rich burnt-brown to a pale lemon colour.



24. a.



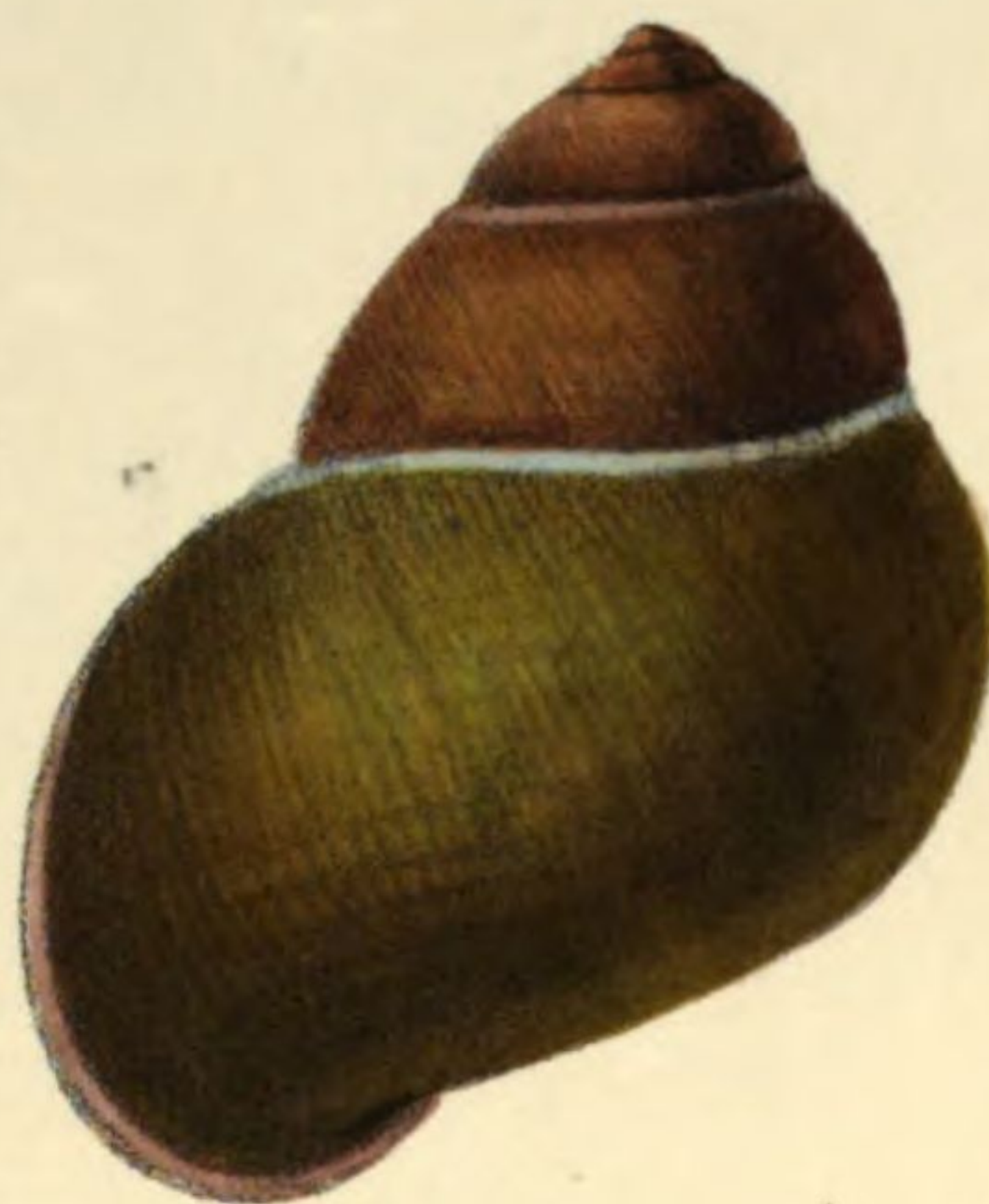
24. b.



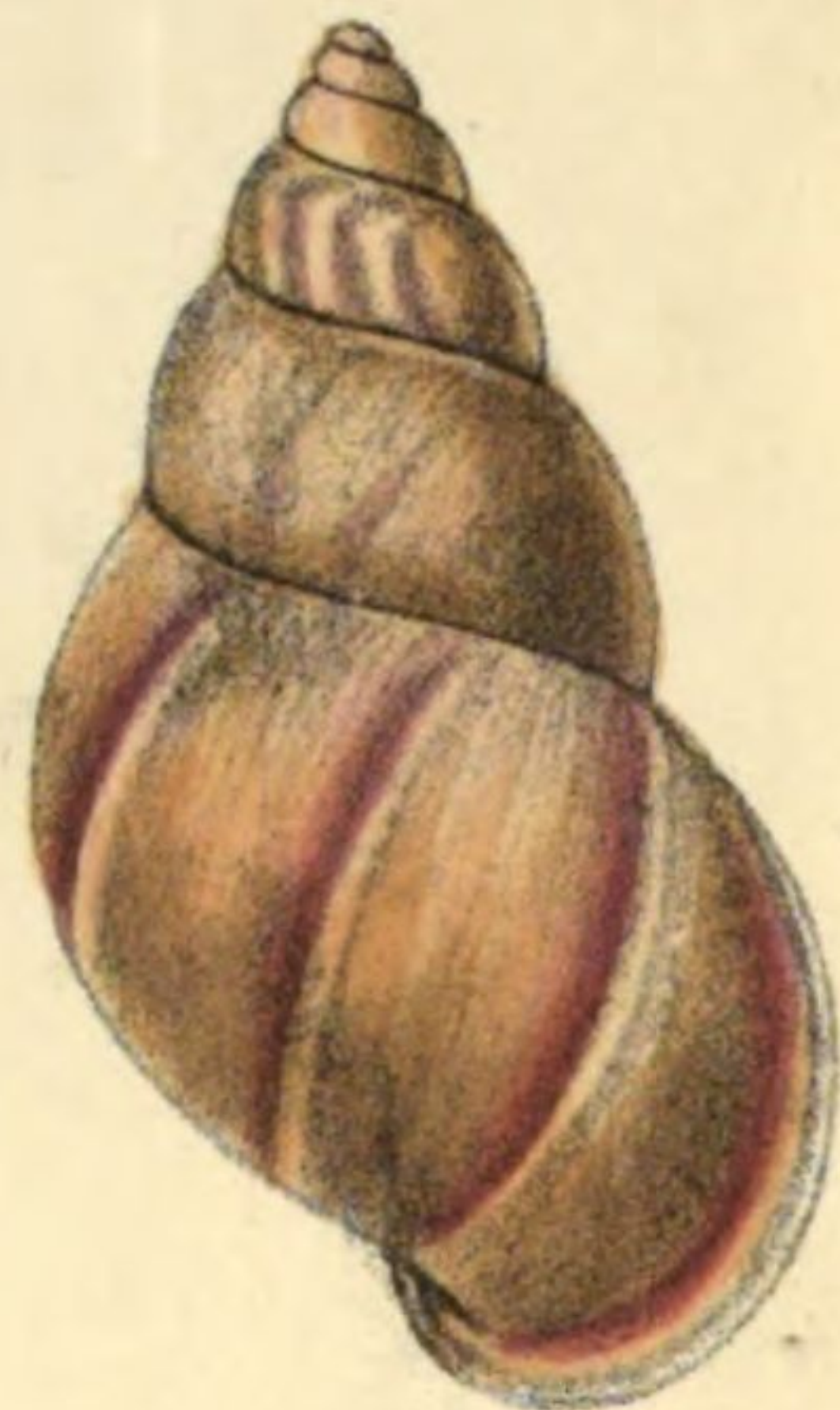
25.



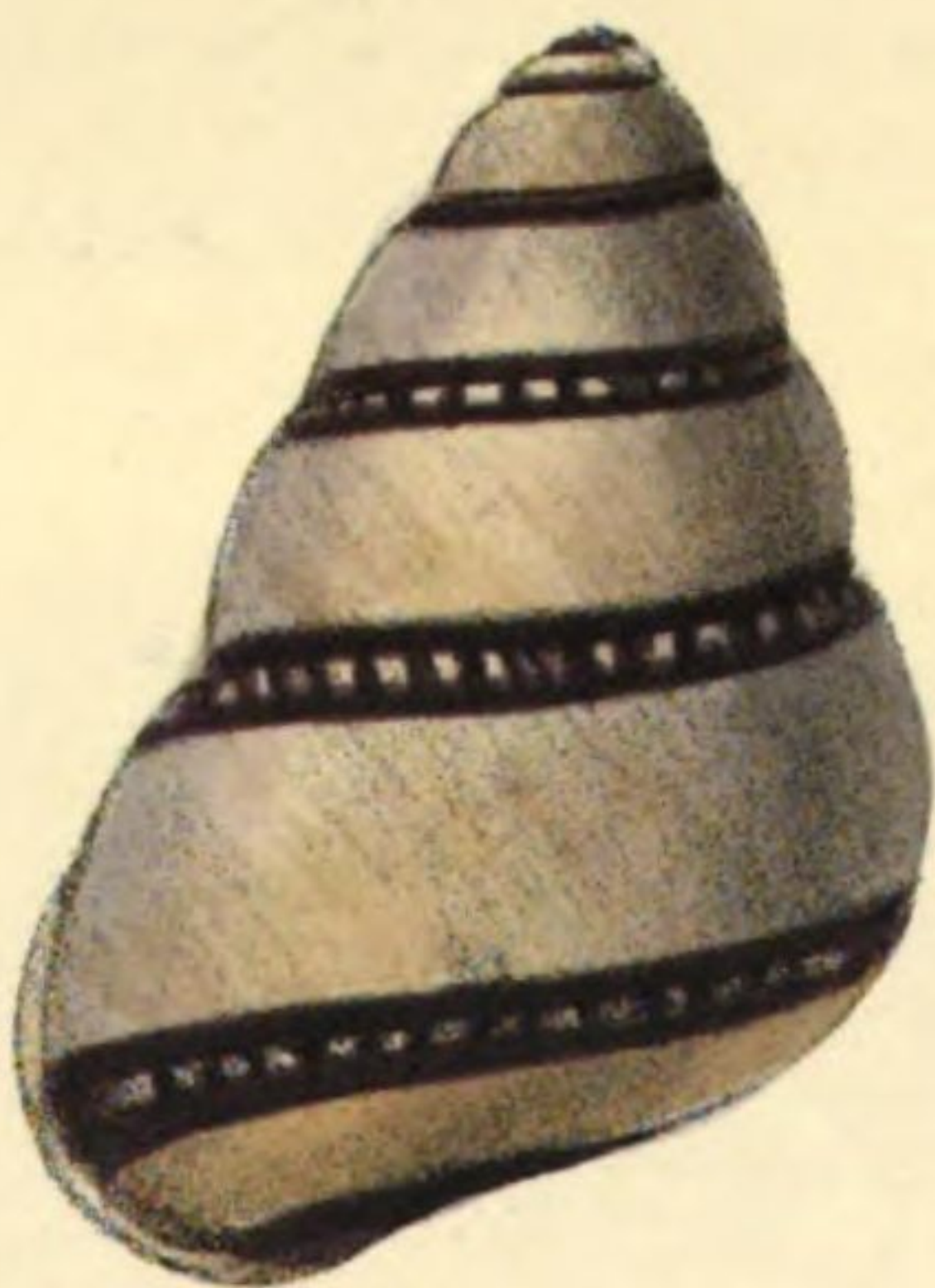
26. a



27. a.



26. b.



28.



27. b.



29.

BULIMUS.

PLATE VIII.

Species 36. (Mus. Cuming.)

BULIMUS CAMELEOPARDALIS. *Bul. testā elongato-oblongā, spirā valdē productā, anfractibus septenis, plano-converxis, ultimo obscurē carinato, columellā arcuatā, aperturā parviusculā; castaneo-flavicante, epidermide virgas longitudinales latiusculas conspicuas, vix undatas, prætermittente; peritremate purpureo-nigricante.*

THE CAMELEOPARD BULIMUS. Shell elongately oblong, spire much produced, whorls seven in number, flatly convex, the last obscurely keeled, columella arched, aperture rather small; chesnut yellow, epidermis leaving rather broad conspicuous longitudinal stripes, scarcely waved, peritreme purple-black.

BRODERIP, Pro. Zool. Soc., 1840, p. 157.

Hab. Sibonga, Island of Zebu, Philippines (on the leaves of bushes); Cuming.

Distinguished by its elongated dactylose form, and by the bold longitudinally striped pattern of the epidermis.

Species 37. (Fig. a and b. Mus. Cuming.)

BULIMUS BOHOLENSIS. *Bul. testā subelongato-oblongā, anfractibus senis, leviter convexis, columellā vix intortā; pallidē castaneā, apicem versus flavicante, epidermide maculas sparsas strigasque acutē undatas, sæpē angustas, numerosas, prætermittente, peritremate purpureo-nigricante.*

THE BOHOL BULIMUS. Shell somewhat elongately oblong, whorls six in number, slightly convex, columella a little twisted; pale chesnut, yellowish towards the apex, epidermis leaving sharply zig-zag streaks, sometimes numerous and narrow, with scattered spots, peritreme purple-black.

BRODERIP, Pro. Zool. Soc., 1840, p. 158.

Hab. Island of Bohol, Philippines (on leaves of trees); Cuming.

In general aspect this species approximates closely to the preceding; it is, however, less elongated in form, and the epidermal pattern is of an oblique zig-zag character, which is sometimes developed with peculiar neatness.

Species 38. (Mus. Cuming.)

BULIMUS CALISTA. *Bul. testā elongato-ovatā, anfractibus septenis, convexis, columellā subintortā; stramineā,*

epidermide tenuiculā, in strigis longitudinalibus undatis, peritremate purpureo-nigricante, apice rufo-castaneo.

THE CALISTA BULIMUS. Shell elongately ovate, whorls seven in number, convex, columella slightly twisted; straw-colour, epidermis rather thin, in waved longitudinal streaks, peritreme purple-black, apex reddish chesnut.

BRODERIP, Pro. Zool. Soc., 1842, p. 152.

Hab. Tanhay, Island of Negros, Philippines (on the leaves of bushes); Cuming.

The *B. Calista* is of a delicate straw-colour, with a very light epidermis; in form it approaches the *B. Boholensis*, and the colouring of the peritreme and columella is nearly the same.

Species 39. (Mus. Cuming.)

BULIMUS DACTYLUS. *Bul. testā pyramidal-oblongā, basin versus peculiariter effusā; anfractibus septenis, convexis, ultimo obscurē carinato; columellā subintortā; castaneo-fuscescente, epidermide longitudinaliter nebulatim undatā, lineam spiralem infernē prætermittente, peritremate castaneo-nigricante.*

THE FINGER BULIMUS. Shell pyramidally oblong, peculiarly effused towards the base; whorls seven in number, convex, the last obscurely keeled; columella slightly twisted; light chesnut-brown, epidermis longitudinally nebulously waved, leaving a spiral linear mark round the lower part, peritreme chesnut-black.

BRODERIP, Pro. Zool. Soc., 1842.

Hab. Mountains of Tayabas, Island of Luzon, Philippines (on the leaves of trees); Cuming.

This species, of which Mr. Cuming collected but few specimens, may be recognised by its acuminate growth and effused development of the aperture. It appears to come nearer the *B. carinatus* of Lea in these respects, than any that has been attributed to that species.

Species 40. (Mus. Cuming.)

BULIMUS DIANA. *Bul. testā elongato-oblongā, anfractibus septenis, convexis, columellā subintortā; stramineā, apicem versus eburneā, epidermide tenui longitudinaliter nebulatā et strigatā, peritremate eburneā.*

THE DIANA BULIMUS. Shell elongately oblong, whorls seven in number, convex, columella slightly twisted; straw-colour, ivory-white towards the apex, epidermis thin, longitudinally streaked and clouded, peritreme very white.

BRODERIP, Pro. Zool. Soc., 1840, p. 157.

Hab. Tanhay, Island of Negros, Philippines (on the leaves of bushes); Cuming.

The chief point of difference between this species and the *B. Calista* appears to consist in the shining ivory-white peritreme and apex, and it is not unlikely, as Mr. Broderip suggests, that they may merge into one and the same species.

Species 41. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS NYMPHA. *Bul. testā subpyramidal-oblongā, anfractibus senis septenisve, convexis, ultimo obscure carinato; columellā vix arcuatā; rufo-castaneā, epidermide in strigis longitudinalibus, latis, rectiusculis, peritremate purpureo-nigricante.*

THE NYMPH BULIMUS. Shell somewhat pyramidally oblong, whorls six or seven in number, convex, the last obscurely keeled; columella scarcely curved; reddish chesnut, epidermis in rather straight broad longitudinal streaks, peritreme purple-black.

PFEIFFER, Pro. Zool. Soc., 1842, p. 89.

Hab. Fig. *a*, Mount Isarog; Fig. *b*, Catanauan, Island of Luzon, Philippines (on the leaves of trees); Cuming.

The variety represented at Fig. *b* is composed of a whorl less than the other, and is of more ventricose proportions. From *B. Boholensis*, to which this species is perhaps the nearest allied, it differs in being of a more acuminate form, whilst the pretty zig-zag pattern is wanting in the epidermis.

Species 42. (Mus. Cuming.)

BULIMUS SIQUIJORENSIS. *Bul. testā oblongo-ovatā, tenuiculā, anfractibus senis, subventricosis, ultimo obscure carinato; columellā rectiusculā, aperturā paululum effusā; flavicante, epidermide tenui, pulcherrimè marmoratā et flammata, peritremate purpureo-nigricante, apice rufescente-castaneo.*

THE SIQUIJOR BULIMUS. Shell oblong-ovate, rather thin, whorls six in number, rather ventricose, the last obscurely keeled; columella nearly straight, aperture a little effused; yellowish, prettily flamed and marbled, peritreme purple-black, apex reddish chesnut.

PFEIFFER, Pro. Zool. Soc., 1845, p. 74.

Hab. Island of Siquijor, Philippines (on the leaves of trees); Cuming.

A light ventricose shell, in which the epidermis is disposed in light sharply zig-zag flames, and beneath the keel, which is obscurely developed on the last whorl, there is an interrupted band of indistinct arrow-headed marks.



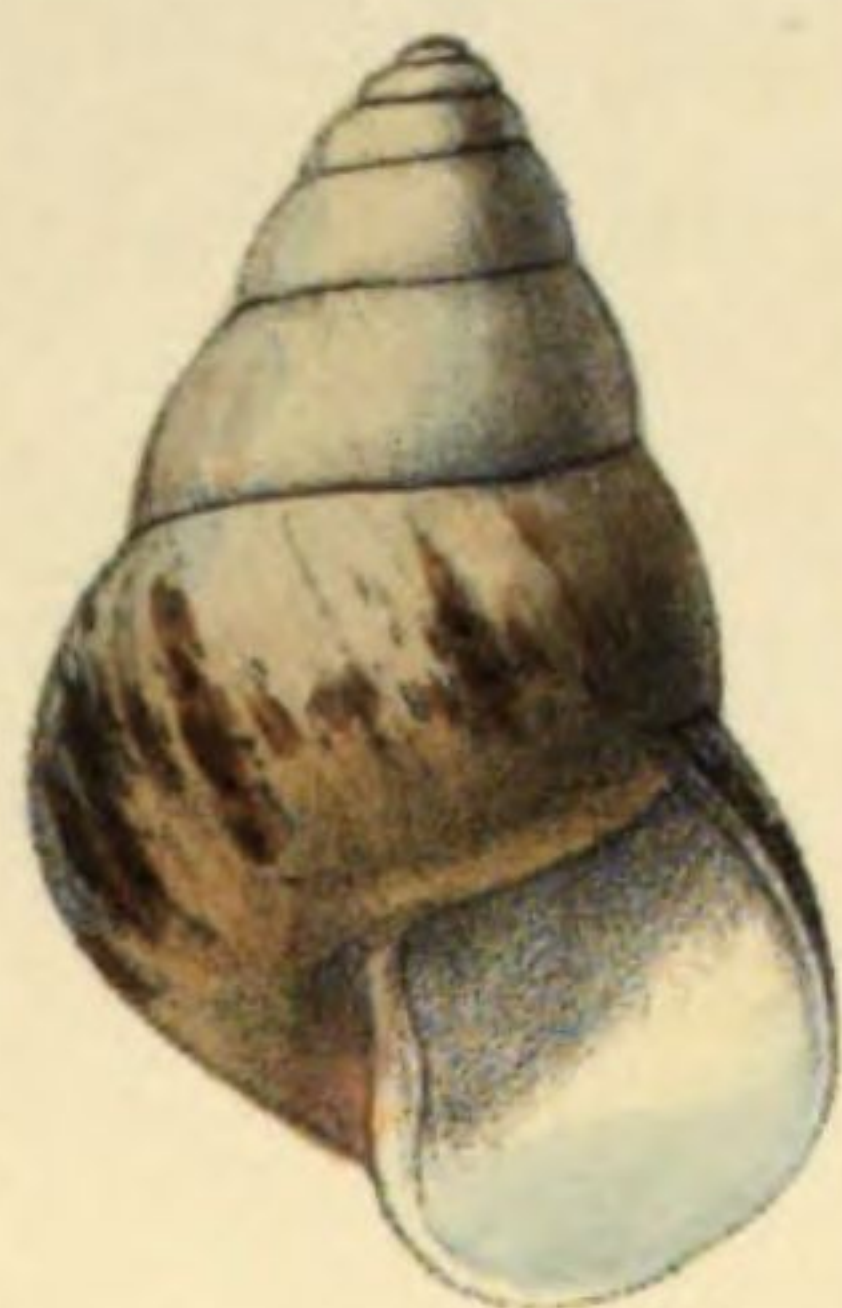
30. a.



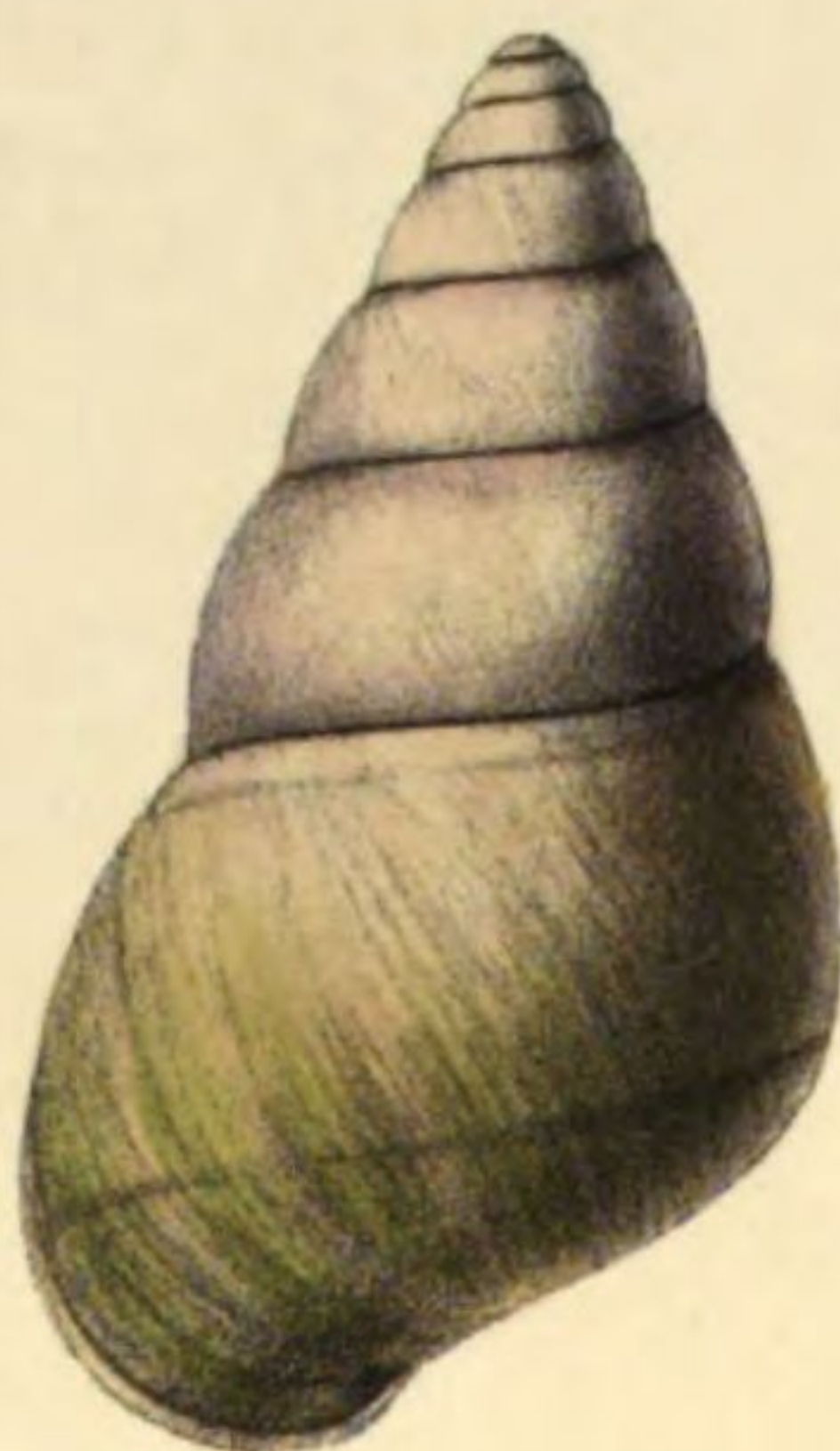
31.



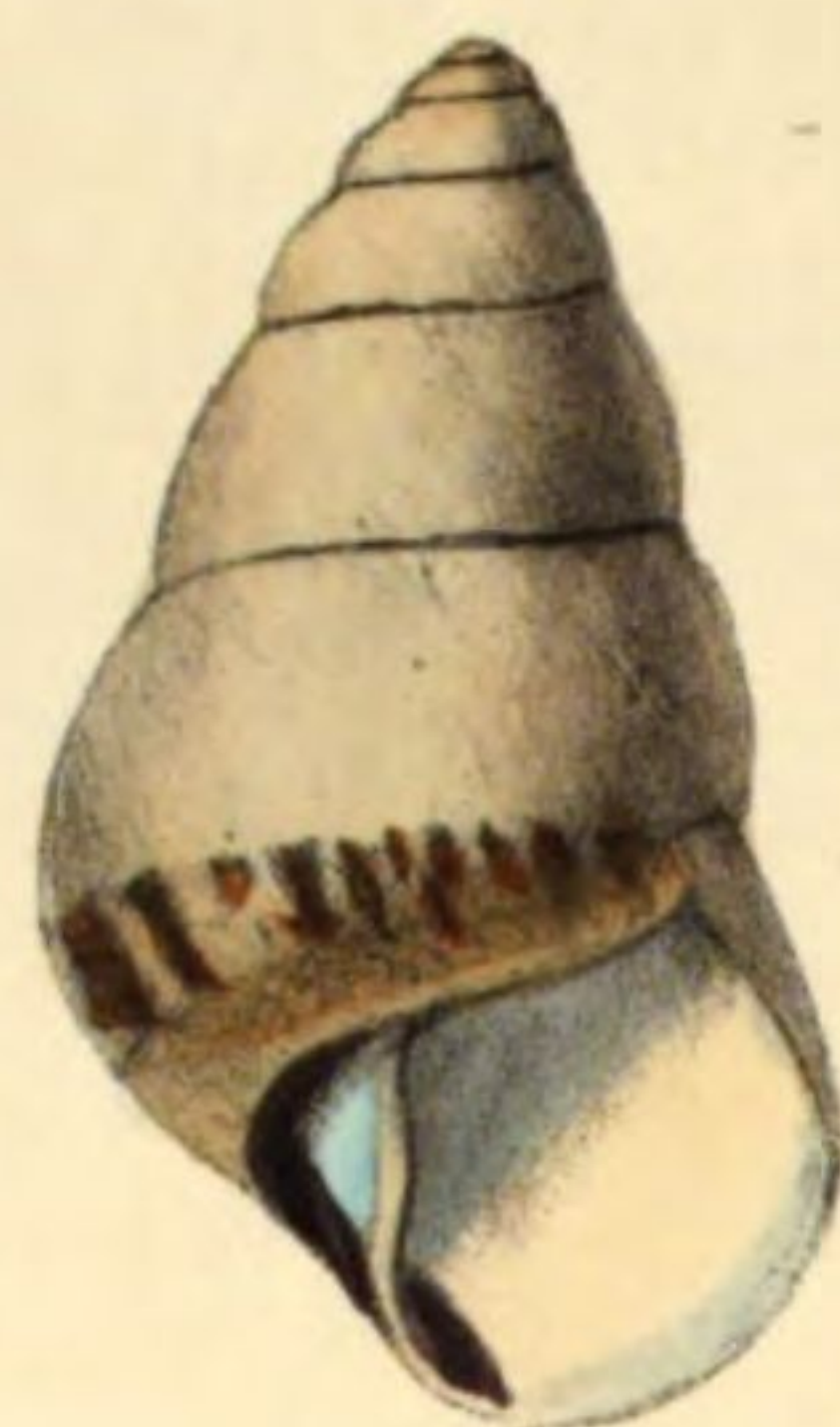
30. b.



30. c.



32.



30. d.



33.



34.



35.

BULIMUS.

PLATE VII.

Species 30. (Fig. *a*, *b*, *c*, and *d*. Mus. Cuming.)

BULIMUS CININNUS. *Bul. testā ovato-pyramidali, tenui, subhyalinā, anfractibus senis subrotundatis, columellā subintortā, labro simplici, vix reflexo; pallidè rosaceā, albidā aut virescente, epidermide fuscā basin versus sparsim maculatā.*

THE CURL BULIMUS. Shell ovately pyramidal, thin, rather transparent, whorls six in number, somewhat rounded, columella slightly twisted, lip simple, scarcely reflected; pale pink, whitish or greenish, sparingly bespotted towards the base with dark brown epidermis.

SOWERBY, Pro. Zool. Soc., 1840, p. 98.

Hab. Islands of Temple and Burias, Philippines (on the leaves of trees); Cuming.

A very delicate and extremely variable species, the epidermis of which is of so tenacious a character that it is rare to meet with specimens having any portion adhering. The colour of some is purple, of others light pink or pale green, and the shell has not unfrequently a pink columella.

Species 31. (Mus. Cuming.)

BULIMUS CALYPSO. *Bul. testā subpyramidali-ovatā, diaphanā, anfractibus senis, convexis; columellā peculiariter contortā et truncatā, labro tenui, vix reflexo; albidā, fasciis pallidè olivaceo-luteis, præcipuè in anfractu ultimo, cingulatā; columellā apice et peritremate roseo-purpureis.*

THE CALYPSO BULIMUS. Shell somewhat pyramidally ovate, diaphanous, whorls six in number, convex; columella peculiarly twisted and truncated, lip thin, but little reflected; whitish, encircled with pale olive yellow bands, especially round the last whorl, columella apex and peritreme rose-purple.

BRODERIP, Pro. Zool. Soc., 1840. p. 182.

Hab. Tanhay, Isle of Negros, Philippines (in the woods); Cuming.

Only two specimens of this very delicate diaphanous species were collected; it is encircled by numerous faint olive-yellow bands, somewhat crowded towards the base, and the columella, peritreme, and first two whorls of the shell are of a deep rose-purple; there is, moreover, a dark purplish stripe around the columella.

It is a peculiarity in this species that the banded pattern does not reside in the epidermis, as in most of its congeners, but in the shell, where it may be observed winding round the interior.

Species 32. (Mus. Cuming.)

BULIMUS VIRENS. *Bul. testā pyramidali-ovatā, leviusculā, nitidā, anfractibus septenis, subplano-convexis, ultimo infernè obscurè angulato; columellā vix intortā, labro subreflexo; albā, epidermide tenui virescente basin versus indutā.*

THE PALE GREEN BULIMUS. Shell pyramidally ovate, rather smooth, shining, whorls seven in number, rather flatly convex, the last obscurely angled round the lower part; columella slightly twisted, lip but little reflected; white, covered with a thin epidermis which is of a pale green colour towards the base.

PFEIFFER, Pro. Zool. Soc., 1840, p. 153.

Hab. Island of Burias, Philippines (on leaves of trees); Cuming.

I cannot trace the resemblance which Dr. Pfeiffer notices between this shell and *B. carinatus*, Lea; the figure of that species in the Transactions of the Academy of Natural Sciences of Philadelphia, represents a shell belonging rather to that division of the genus which is characterised by a hydrophanous epidermis.

Species 33. (Mus. Cuming.)

BULIMUS HINDSII. *Bul. testā oblongo-ovatā, anfractibus quinis convexis, columellā subintortā, labro reflexo; albā, anfractibus fasciā castaneā supra et infra cingulatis, epidermide tenui luteā, parte circa columellam et peritremate purpureo-fuscis.*

HIND'S BULIMUS. Shell oblong-ovate, whorls convex, columella slightly twisted, lip reflected; white, whorls encircled above and below with a chesnut band, epidermis thin, yellow, peritreme and part around the columella purple-brown.

PFEIFFER, MSS. Mus. Cuming.

Hab. Tayabas, Island of Luzon, Philippines (on the leaves of trees); Cuming.

The general aspect of this shell is very simple, but it is not a species of common occurrence.

Species 34. (Mus. Cuming.)

BULIMUS ROMBLONENSIS. *Bul. testā pyramidalī-ovatā, anfractibus senis leviter convexis, striis transversis et obliquis subtilissimè obscurè decussatis, columellā intortā; virescente-albā, glabrā, nitidā, anfractibus fasciā castaneā infernè cingulatā, epidermide tenui viridiluteā, parte circa columellam nigricante-castaneā, columellā et peritremate albis.*

THE ROMBLON BULIMUS. Shell pyramidally ovate, whorls slightly convex, obscurely decussated with very fine transverse and oblique striæ, columella twisted; greenish-white, smooth, shining, whorls encircled round the lower part with a chesnut band, epidermis thin, greenish yellow, blackish chesnut around the columella, columella and peritreme white.

PFEIFFER, Pro. Zool. Soc., 1842, p. 152.

Hab. Island of Romblon, Philippines (on the trees); Cuming.

A bright shining species closely resembling a variety of *B. cincinnus*, not figured in the accompanying plate, which is sufficiently distinct in form to prevent their being confounded, the one for the other.

Species 35. (Mus. Cuming.)

BULIMUS SUBCARINATUS. *Bul. testā conico-ovatā, sub-*

pellucidā, anfractibus senis convexis, striis transversis et obliquis subtilissimè decussatis, ultimo infernè obscurè subcarinato, columellā vix intortā, labro reflexo, subeffuso; cærulescente-albā, epidermide hydrophanā fuscescente ad suturas peculiariter auratā, sub alterā corneā.

THE SLIGHTLY-KEELED BULIMUS. Shell conically ovate, somewhat transparent, whorls six in number, convex, very finely decussated with fine transverse and oblique striæ, last whorl obscurely slightly keeled, columella but little twisted, lip reflected, somewhat effused; blueish white, epidermis hydrophanous, light brown, peculiarly golden tinged at the sutures, over another one of a thin horny substance.

PFEIFFER, Pro. Zool. Soc., 1842, p. 153.

Hab. Island of Romblon, Philippines (on the leaves of trees); Cuming.

This delicate semi-transparent species serves to illustrate in an interesting manner the phenomenon, observed in many *Bulimi*, of a double epidermis. The shell under consideration is a clear opal white, it is then covered with a thin, shining, greenish, horny epidermis, over which is a soft, tenacious, porous, hydrophanous one, curiously puckered and tinged with a bronze or golden hue around the sutures.



36.



37 a.



37. b.



38.



39.



40.



41. a.



42.



41. b.

BULIMUS.

PLATE VI.

Species 24. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS GUIMARASENSIS. *Bul. testā subacuminato-oblongā, anfractibus quinis, convexis; albā, glabrā, anfractibus fasciā fuscā conspicuā supra infraque cingulatis, epidermide tenui nitidā luteo-olivaceā indutā.*

THE GUIMARAS BULIMUS. Shell somewhat acuminately oblong, whorls five in number, convex; white, smooth, whorls encircled above and below by a conspicuous brown band, and covered by a thin shining yellowish olive epidermis.

BRODERIP, Pro. Zool. Soc., 1840, p. 156.

Hab. Island of Guimaras, Philippines (on the trees); Cuming.

A well-defined though not a particularly striking shell, partaking of the character of *B. ovoideus* and *citrinus*. Fig. 24 *a* is the ordinary state of the species; the variety represented at Fig. 24 *b* is one of rare occurrence, in which the bands are unusually broad and dark coloured.

Species 25. (Mus. Cuming.)

BULIMUS FRATER. *Bul. testā subacuminato-oblongā, anfractibus quinis, convexis; rosaceo-albidā, anfractuum parte inferiori zonulā angustā rufescente cingulatā, epidermide tenui nitidā rufescente-luteā indutā.*

THE BROTHER BULIMUS. Shell somewhat acuminately oblong, whorls five in number, convex; pinkish-white, lower part of the whorls encircled by a narrow reddish zone, covered by a thin shining reddish-yellow epidermis.

DE FERUSSAC, Hist. Nat. Moll. terr. et fluv. pl. 112. f. 3 and 4.

Hab. Island of Leyte, Philippines (on the leaves of trees); Cuming.

Dr. Pfeiffer is of opinion that this shell is the *B. frater* of De Férussac, which is highly probable, although his figure of that species represents one of larger dimensions and devoid of the delicate rose colouring.

Species 26. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS MACULIFERUS. *Bul. testā acuminato-oblongā, plerumque sinistrorsā, anfractibus senis, convexis, concentricè striatis, ultimo longiusculo; flavescens-spaldiceā, interdum brunneo maculatā et nebulatā, interdum*

immaculatā, lineā roseā longitudinali hic illic ornatā, suturis albidis, peritremate albā, apice nitidē opaco-albo.

THE BLOTCHED BULIMUS. Shell acuminately oblong, mostly sinistral, whorls six in number, concentrically striated, last whorl rather long; yellowish fawn colour, sometimes blotched and clouded with brown, sometimes unspotted, ornamented here and there with a pink longitudinal line, sutures whitish, peritreme white, apex shining opaque white.

BRODERIP, Pro. Zool. Soc., 1841, p. 14.

Hab. Province of Misamis, Philippines (on the trunks of trees); Cuming.

Dr. Pfeiffer has intimated his opinion that the *B. maculiferus* is a variety of the *B. citrinus*. I cannot, however, agree with him in this; the species are very nearly allied but always distinct. The present is of a more elongated growth, and in all its varieties is characterized by the same pale ferruginous fawn colouring. The variety represented at Fig. 26 *b* is prettily distinguished by three or four narrow longitudinal zones of a delicate rose colour.

Species 27. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS SMARAGDINUS. *Bul. testā oblongo-ovatā, plus minusve ventricosā, anfractibus convexis, subtilissimè obliquè striatis, suturis superficialiter canaliculatis; albā, epidermide tenui corneā nitidā infra suturas indutā; in anfractu ultimo smaragdina vel olivaceo-virescente, purpureo apicem versus evanescente; peritremate interdum albā, interdum pallidē rosaceā.*

THE EMERALD-GREEN BULIMUS. Shell oblong ovate, more or less ventricose, whorls convex, very finely obliquely striated, sutures superficially channelled, white, covered beneath the sutures with a thin shining horny epidermis; bright emerald-green or olive-green on the last whorl, fading into purple towards the apex, peritreme sometimes white, sometimes light pink.

REEVE, Pro. Zool. Soc., 1842, p. 49. Conch. Syst. vol. ii. pl. 173. f. 6.

Hab. Surigao, Island of Mindanao, Philippines (on the leaves of trees); Cuming.

The accompanying figures of this bright coloured and delicate species represent extreme states of it, one being much more ventricose and of a lighter colour than the

other. The chief peculiarity of the *B. smaragdinus* consists in the nature of its epidermis, which, unlike that in most of the preceding Philippine species, exhibits no pattern, but contains all the colouring matter. The shell is pure white, and the beautiful emerald-green colour, so much to be admired, resides within the epidermis, which is of a thin shining horny character, commencing in a singular manner just beneath the sutures, and may be peeled away.

Species 28. (Mus. Cuming.)

BULIMUS CININNIFORMIS. *Bul. testā subpyramidaliformi, tenuiculā, anfractibus senis, plano-convexis; albā, anfractibus fasciis duabus distantibus, nigricantibus, epidermidis particulis notatis cingulatis, labro tenui, vix reflexo.*

THE CURL-SHAPED BULIMUS. Shell somewhat pyramidally ovate, rather thin, whorls six in number, flatly convex; white, whorls encircled with two distant black bands marked with particles of epidermis, lip thin, scarcely reflected.

Hab. Island of Luban, Philippines (on the trees); Cuming.

A thin pyramidal shell, in which the black bands are curiously studded with light particles of epidermis.

Species 29. (Mus. Cuming.)

BULIMUS SATYRUS. *Bul. testā subpupiformi, anfractibus quinis, convexis, columellā subintortā; purpureo-nigrā, epidermide fuscā simplici indutā, aperturā cærulescente-albā, columellā carneo-purpurascete, peritremate purpureo-nigrā.*

THE SATYR BULIMUS. Shell somewhat pupiform, whorls five in number, convex, columella slightly twisted; purple-black, covered with a simple brown epidermis, aperture blueish white, columella light flesh-purple, peritreme purple-black.

BRODERIP, Pro. Zool. Soc., 1842. p. 181.

Hab. Island of Tablas, Philippines (on the leaves of trees); Cuming.

Mr. Cuming only obtained a few specimens of this species; it is of a dark purple-black hue without any epidermal pattern to attract particular attention.



43. a.



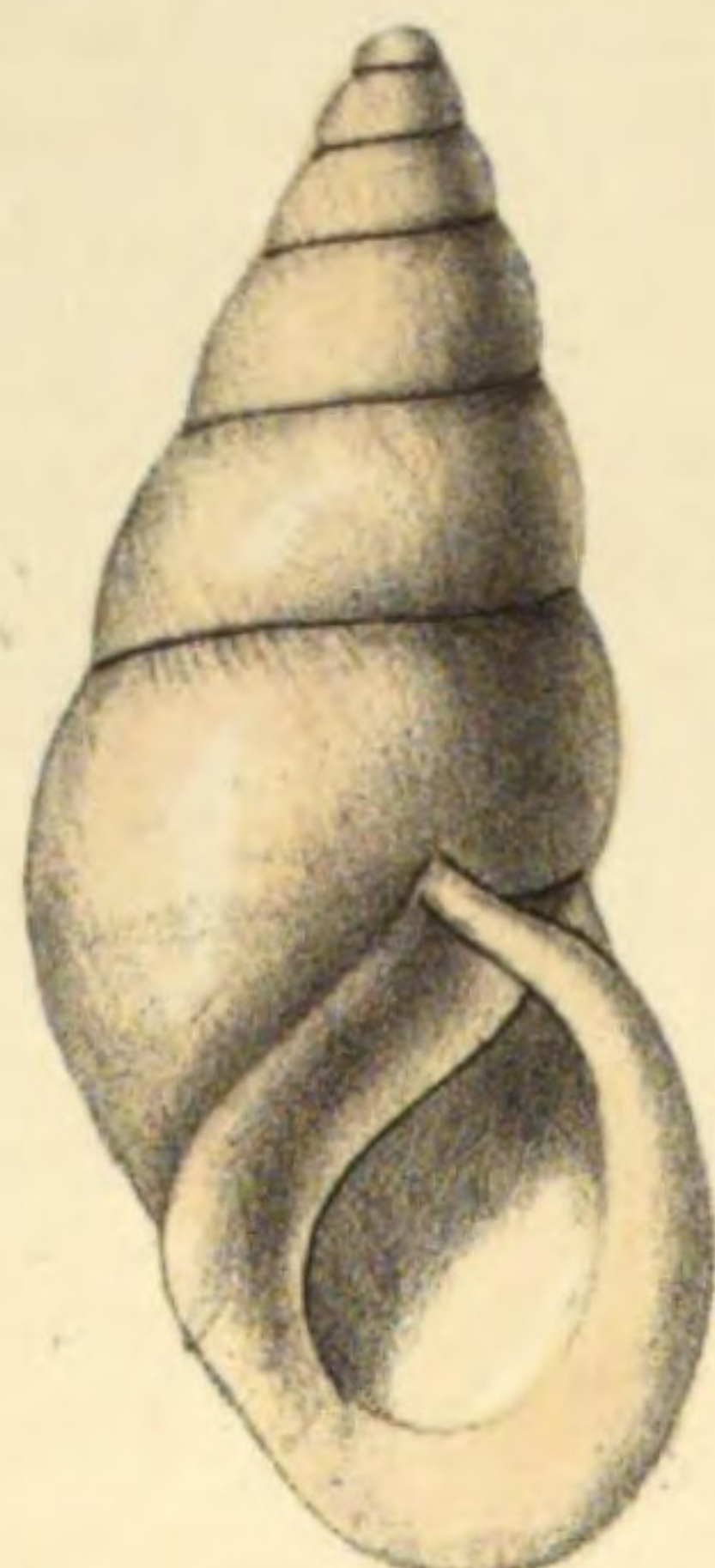
44.



43. b.



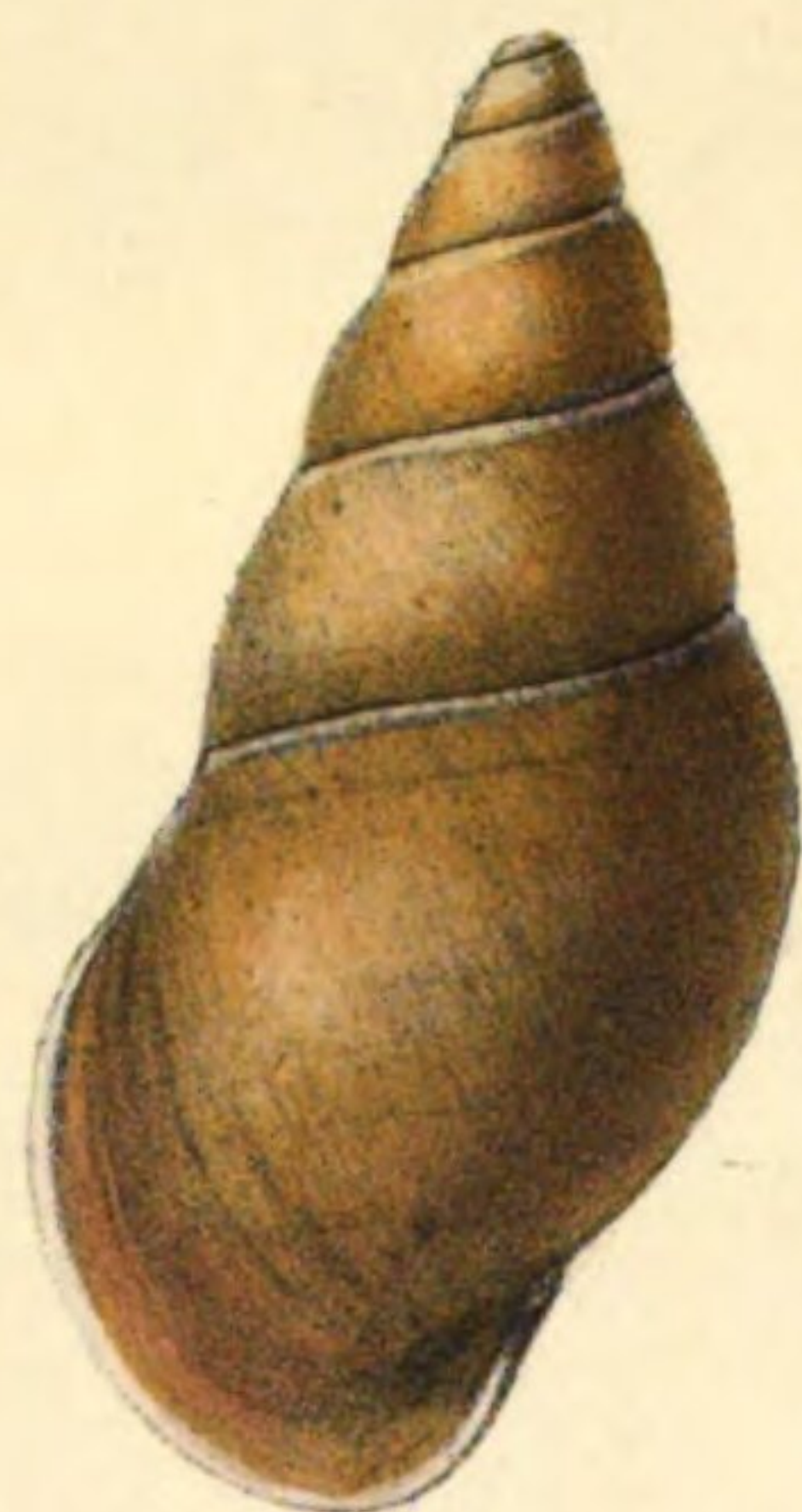
45. a.



45. b.



45. c.



46. a.



46. b.



46. c.

BULIMUS.

PLATE IX.

Species 43. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS CUYOENSIS. *Bul. testā pyramidalī-ovatā, umbilicatā, anfractibus quinīs, subrotundis, ventricosiusculis, columellā subarcuatā; ustulato-fuscā vel stramineā, nigro unifasciatā, epidermide strigas conspicuas longitudinales, vix undatas, exhibente, peritremate albo.*

THE CUYO BULIMUS. Shell pyramidally ovate, umbilicated, whorls five in number, somewhat rounded, rather ventricose, columella slightly arched; burnt brown or straw-colour, encircled by a black band, epidermis exhibiting conspicuous longitudinal slightly waved streaks, peritreme white.

PFEIFFER, Pro. Zool. Soc., 1842, p. 252.

Bulimus calobaptus, Jonas.

Hab. Islands of Cuyo and Mindoro, Philippines (on the trees); Cuming.

This very pretty species was first described by Dr. Pfeiffer, from a single indifferent specimen collected by Mr. Cuming at the Island of Cuyo; others subsequently arrived from the Island of Mindoro, exceeding the former so greatly in size and beauty, that their identity was not recognised.

Species 44. (Mus. Cuming.)

BULIMUS FICTILIS. *Bul. testā cylindraceo-oblongā, subumbilicatā, anfractibus senis, convexis, columellā labroque latè reflexis; rufo-castaneā, epidermide lacteā opacā, strigas paucas longitudinales irregulares prætermittente, peritremate albo.*

THE EARTHEN BULIMUS. Shell cylindrically oblong, slightly umbilicated, whorls six in number, convex, lip and columella widely reflected; reddish chesnut, covered with an opaque cream-coloured epidermis, leaving a few irregular longitudinal streaks, peritreme white.

BRODERIP, Pro. Zool. Soc., 1840.

Hab. Island of Cuyo, Philippines (on the leaves of trees); Cuming.

I much doubt if the *Bulimus larvatus* of Broderip, (Sowerby, Conch. Illus. f. 117) is distinct from this; it was described, with some hesitation, from a single specimen in rather indifferent condition, and its specific value has not been confirmed by the receipt of any specimens showing more distinctly the characters which it served to indicate.

Species 45. (Fig. *a*, *b*, *c*. Mus. Cuming.)

BULIMUS DRYAS. *Bul. testā elongato-ovatā, crassiusculā, subumbilicatā, anfractibus senis, convexis, aperturā subcontractā, labro crassiusculo, latè reflexo; eburneā, plerumque castaneo vel fusco-nigricante conspicuè fasciatā, epidermide vix nullā.*

THE DRYAS BULIMUS. Shell elongately ovate, rather thick, slightly umbilicated, whorls six in number, convex, aperture somewhat contracted, lip rather thick, broadly reflected; ivory-white, mostly conspicuously banded with chesnut and brownish-black, with scarcely any epidermis.

BRODERIP, Pro. Zool. Soc., 1840.

Bulimus porraceus, Jay.

Testa juvenis, *Bulimus paradoxus*, Pfeiffer.

Hab. Mansalai, Island of Mindoro, Philippines (in the woods); Cuming.

Of a peculiarly thickened growth compared with other species, giving a widely reflected lip to the aperture, with an extremely slight epidermis. The rich dark chesnut bands with which it is mostly encircled are deeply stained in the shell.

Species 46. (Fig. *a*, *b*, *c*. Mus. Cuming.)

BULIMUS SYLVANUS. *Bul. testā elongato-ovatā, subpyramidalī, anfractibus senis, subventricosus, aperturā subeffusā, labro latè reflexo; albidā, castaneo-fusco plerumque latifasciatā, epidermide luteā corneā, strigas remotas longitudinales plerumque exhibente, peritremate albo, sæpe castaneo vel roseo marginato.*

THE SYLVANUS BULIMUS. Shell elongately ovate, somewhat pyramidal, whorls six in number, rather ventricose, aperture slightly effused, lip widely reflected; whitish, generally broadly banded with chesnut-brown and covered with a thin yellow horny epidermis, frequently exhibiting remote longitudinal streaks, peritreme white, often edged with rose or chesnut.

BRODERIP, Pro. Zool. Soc., 1840.

Hab. Puerto Portrero, Island of Mindoro (in the woods); Cuming.

This species, it will be observed, is distinguished from the preceding by its lighter growth, deeper colour, and more developed epidermis.

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47.



19. d.



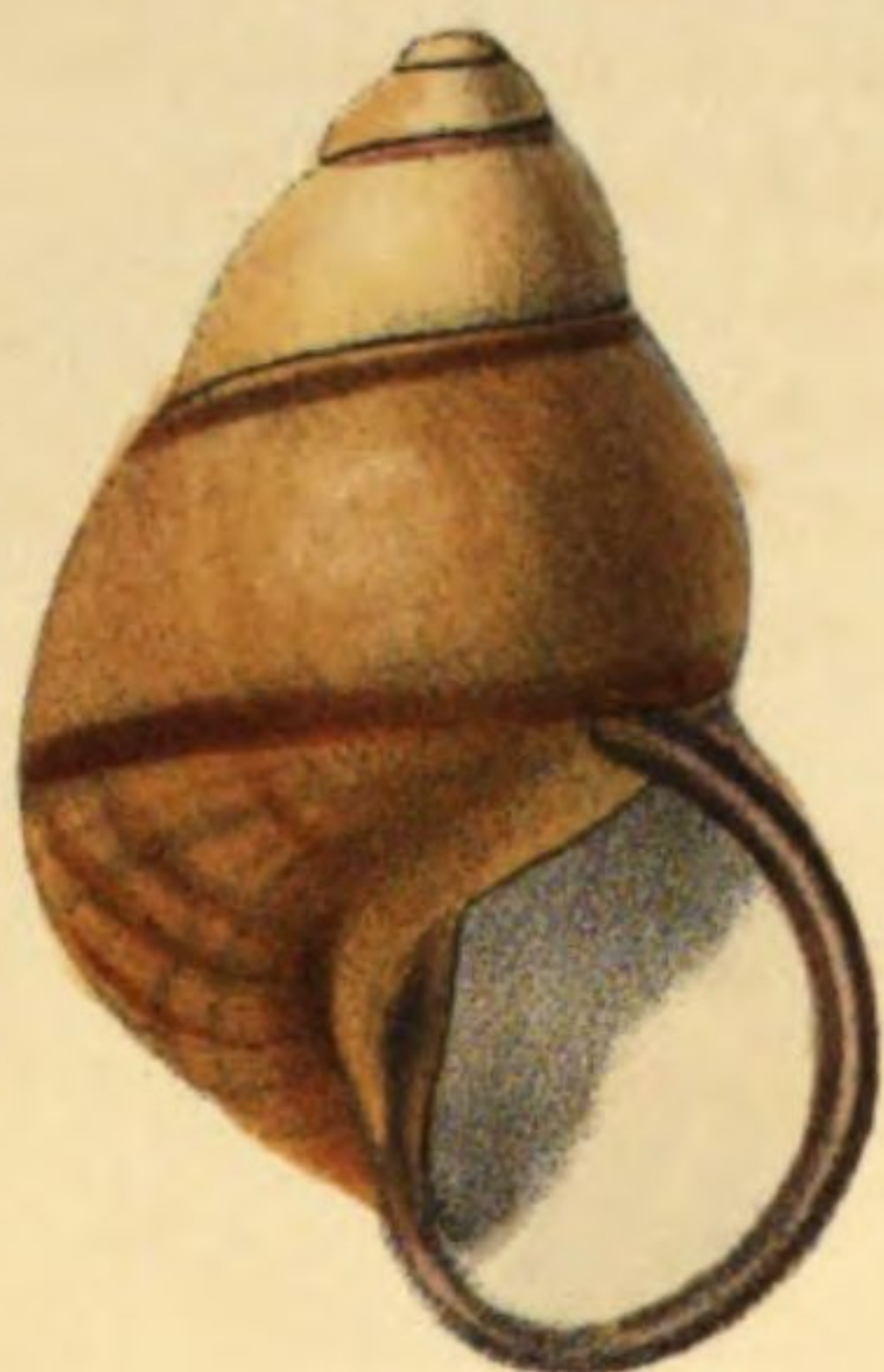
19. c.



48.



50. a.



49.



51.



50. c.



50. b.



52.

BULIMUS.

PLATE X.

Species 47. (Mus. Cuming.)

BULIMUS APLOMORPHUS. *Bul. testā conico-ovatā, anfractibus senis, convexis, ultimo supernè obscure angulato, aperturā parviusculā, labro fortiter reflexo; castaneo-lutescente, zonis rufo-fuscis duabus cingulatā, epidermide tenuissimā, peritremate albo.*

THE SIMPLE-FORM BULIMUS. Shell conically ovate, whorls six in number, convex, last whorl obscurely angled at the lower part, aperture rather small, lip strongly reflected; chesnut-yellow, encircled with two red-brown zones, epidermis very slight, peritreme white.

JONAS, Pro. Zool. Soc., 1842. p. 189.

Hab. Philippine Islands.

Allied to *A. Guimarasensis* but of another form, differing principally in being more conical and in having a second thin white hydrophanous epidermis, which, however, in the specimen figured, is much rubbed away. It was not collected by Mr. Cuming.

Fig. 19 *c* and *d*. (Mus. Cuming.)

The shells here represented are without doubt varieties of the *B. pictor* described at Plate IV. although so much smaller in size, and not characterized by the zigzag shadowed flames depicted in the specimens there figured: in these the outer hydrophanous epidermis is either arranged in slightly waved streaks, or it covers the shell leaving streaked spaces. Where the varieties chiefly simulate is in the livid purple-black colouring of the peritreme.

Species 48. (Mus. Cuming.)

BULIMUS UBER. *Bul. testā subabbreviato-ovatā, tenuiculā, diaphanā, anfractibus quaternis, ventricosus, longitudinaliter confertim regulariter striatis, ultimo spiræ magnitudinem valdè superante; pellucido-albā, epidermide tenui lutescente indutā.*

THE NIPPLE BULIMUS. Shell somewhat shortly ovate, rather thin, diaphanous, whorls four in number, ventricose, longitudinally closely regularly striated, last whorl far exceeding the size of the spire; transparent white, covered by a thin yellowish epidermis.

PFEIFFER, Pro. Zool. Soc., 1842. p. 153.

Hab. Island of Guimaras, Philippines, (on the leaves of trees); Cuming.

The spire of this shell is of a peculiarly swollen mammillary structure, whilst the shell is composed of no more than four whorls; it is of a semitransparent diaphanous texture with only a very simple shining epidermis.

Species 49. (Mus. Cuming.)

BULIMUS ÆGLE. *Bul. testā oblongo-ovatā, vix pyramidalī, anfractibus quinīs, convexis, obliquè creberrimè striatis, ultimo subeffuso, infernè obscure obtuso-carinato; fulvā, basi indistinctè fasciatā, suturis subtilissimè albilineatis, peritremate conspicuè castaneo-fusco.*

THE ÆGLE BULIMUS. Shell oblong-ovate, scarcely pyramidal, whorls five in number, convex, obliquely very closely striated, last whorl somewhat effused, obscurely obtusely angled round the lower part; fulvous, indistinctly banded at the base, sutures marked with a very fine white line, peritreme conspicuously stained with chesnut-brown.

BRODERIP, Pro. Zool. Soc., 1840. p. 181.

Hab. Casan, Province of Misamis, Island of Mindanao, Philippines (in a dense forest on the leaves of trees); Cuming.

Peculiar in form but of a dull fulvous hue, not distinguished by any ornamental epidermis, nor of an aspect at all complimentary to the fair nymph to whom it is dedicated.

Species 50. (Mus. Cuming.)

BULIMUS LEUCOPHÆUS. *Bul. testā subpyramidalī-ovatā, crassiusculā, plus minus ventricosā, anfractibus senis, convexis, columellā rectā, aperturā subcontractā, labro reflexo; castaneo-fuscā, epidermide leucophæā, sæpe albiflammātā, infernè fasciā angustā vel lineā nigricante cingulatā, interdum zonā, infra suturas, albidā, hic illic peculiariter abrasā, columellā et aperturæ fauce cærulescente-albis, peritremate castaneo-nigricante marginato.*

THE RUSSET-GREY BULIMUS. Shell somewhat pyramidally ovate, rather thick, more or less ventricose, whorls six in number, convex, columella straight, aperture slightly contracted, lip reflected; chesnut-brown, covered with a russet-grey epidermis, often

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flamed with white, encircled round the lower part with a dark line or narrow band, sometimes with a white band beneath the sutures peculiarly abraded here and there, columella and interior of the aperture bluish white, peritreme edged with chesnut-black.

Helix leucophæa, Sowerby, Pro. Zool. Soc., 1841. p. 19.

Hab. Dolores, Province of Pampanga, and Mountains of Igarrotes, Province of Cagayan, Island of Luzon, Philippines (on the trees); Cuming.

There is a singular peculiarity attending this species in the manner in which the epidermis, especially on the band which is sometimes seen beneath the sutures, is abraded, denuding the shell in patches.

Species 51. (Mus. Cuming.)

BULIMUS LEOPARDUS. *Bul. testâ subabbreviato-ovatâ, ventricosâ, anfractibus quinis, convexis, longitudinaliter creberrimè costulato-striatis, ultimo spiræ longitudinem superante, columellâ arcuatâ, aperturâ amplissimâ; luteo-castaneâ, epidermide albidâ sparsâ, sub alternâ tenui corneâ, variegatâ, peritremate purpureo-castaneo.*

THE LEOPARD BULIMUS. Shell somewhat shortly ovate, ventricose, whorls five in number, convex, very closely sculptured longitudinally with fine rib-like striæ, last whorl exceeding the length of the spire, columella arched, aperture very large; yellowish-chesnut, variegated with a scattered whitish epidermis upon a thin horny one, peritreme purple-chesnut.

PFEIFFER, Pro. Zool. Soc., 1845, p. 67.

Hab. Island of Mindoro, Philippines.

This remarkable species, of which Mr. Cuming has only the single specimen here represented, is distinguished from all others by the effused and suddenly enlarged development of the last whorl. It is also characterized by a regular succession of longitudinal rib-like striæ of a more defined growth than the ordinary lines of structure, which in a genus so devoid of sculpture is an important feature.

The name is suggested by the scattered interrupted stripes in which the outer hydrophanous epidermis is deposited. The columella, it should be observed, has a pinky hue, and the impress of the striæ imparts a delicate satiny iridescence to the interior of the shell.

Species 52. (Mus. Cuming.)

BULIMUS CONCINNUS. *Bul. testâ pyramidal-oblongâ, anfractibus senis plano-convexis, aperturâ contractâ, labro reflexo; castaneo-fuscâ, epidermide concinnè albido-marmoratâ et flammâtâ, columellâ et aperturæ fauce cærulescente-albis, peritremate nigricante-castaneo*

THE PRETTY BULIMUS. Shell pyramidally oblong, whorls six in number, flatly convex, aperture contracted, lip reflected; chesnut-brown, epidermis prettily flamed and marbled with white, columella and interior of the aperture bluish white, peritreme dark chesnut.

Helix concinna, Sowerby, Pro. Zool. Soc., 1841. p. 20.

Hab. St. Juan, Province of Cagayan, Island of Luzon, Philippines (on the leaves of trees); Cuming.

I much doubt whether this is anything more than a variety of the *B. leucophæa*; it is, however, a well-marked and extremely pretty one.



54. a.



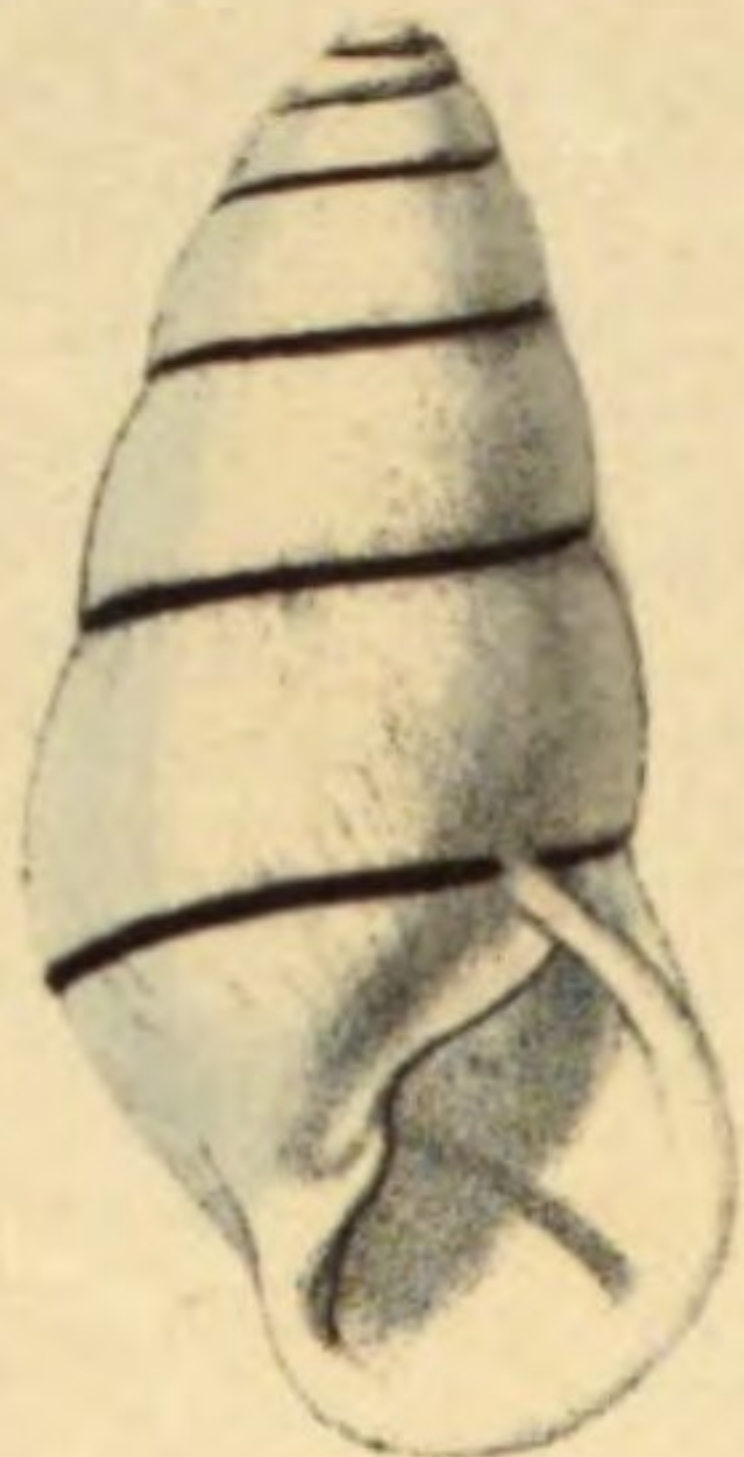
53.



54. b.



56. a.



55.



56. b.



58. a.



57.



59.



60.

BULIMUS.

PLATE XI.

Species 53. (Mus. Cuming.)

BULIMUS INCOMPTUS. *Bul. testā oblongo-ovatā, obtuso-pyramidalī, anfractibus quinīs, rotundatis, columellā rectā, labro vix reflexo; lutescente-brunneā, zonulā nigricante-fuscā cingulatā, epidermide tenui indutā.*

THE UNADORNED BULIMUS. Shell oblong ovate, obtusely pyramidal, whorls five in number, rounded, columella straight, lip but slightly reflexed; yellowish brown, encircled by a narrow blackish brown zone, covered by a thin epidermis.

Helix incompta, Sowerby, Pro. Zool. Soc., 1840.

Hab. Island of Tablas, Philippines.

Only a single specimen of this species was collected, and it has very much the appearance of being an abortive growth of one subsequently named by Mr. Sowerby, *Helix acuminata* (Sp. 60); they are identical in colour and pattern, but vary materially in form.

Species 54. (Fig. a and b. Mus. Cuming.)

BULIMUS PARTULOIDES. *Bul. testā pyramidalī, spirā acuminatā, anfractibus quinīs, convexis, aperturā parviusculā, subquadrato-ovali, labro latissimè reflexo; albidā, zonulā castaneo-nigricante cingulatā, epidermide luteā indutā, interdum omnino intensè castaneā, peritremate albo.*

THE PARTULA-LIKE BULIMUS. Shell pyramidal, spire acuminated, whorls five in number, convex, aperture rather small, somewhat square-ovate, lip very broadly reflected; whitish, encircled by a narrow chesnut black zone, covered by a yellow epidermis, sometimes dark chesnut throughout, peritreme white.

Broderip, Pro. Zool. Soc., 1840, p. 181.

Hab. Island of Tablas, Philippines (on the leaves of trees); Cuming.

This is the nearest approach to *Partula* of any species of the genus, the aperture having the same square-like form and widely reflexed lip.

Species 55. (Mus. Cuming.)

BULIMUS LUZONICUS. *Bul. testā subelongato-ovatā, apice obtusā, anfractibus senis, convexis, columellā intortā, aperturā subcontractā, labro reflexo; eburneā, zonulā angustā nigricante conspicuè cingulatā.*

THE LUZON BULIMUS. Shell somewhat elongately ovate, obtuse at the apex, whorls six in number, convex, columella twisted, aperture somewhat contracted, lip reflexed; ivory white, conspicuously encircled by a narrow black zone.

Hab. Island of Masbate, Philippines (on the trees); Cuming.

I have always considered this shell to represent a species distinct from *B. ovoideus*, and propose to re-establish Mr. Sowerby's name, although he himself abandoned it upon the grounds of its relationship. It is of a more elongately oblong form, is composed of a whorl more, and the narrow black zone with which it is encircled never varies. These characters may be regarded as of trifling importance, but they are constant. In a parcel of upwards of a hundred of each species which came into my possession some time since, there was no variation or the least tendency to merge one into the other. The name is rather an inappropriate one, for Mr. Cuming did not collect a single species at Luzon; there is, however, no reason why it might not become naturalized in that island.

Species 56. (Fig. a and b. Mus. Cuming.)

BULIMUS OVOIDEUS. *Bul. testā oblongo-ovatā, subventricosā, apice obtusā, anfractibus quinīs, convexis, columellā vix intortā, labro reflexo; albā, fasciis duabus tribusve latiusculis aurantio-vel castaneo-fuscis cingulatā, epidermide tenuissimā.*

THE OVOID BULIMUS. Shell oblong ovate, rather ventricose, obtuse at the apex, whorls five in number, convex, columella scarcely twisted, lip reflected; white, encircled with two or three rather broad orange-brown or chesnut bands, epidermis very thin.

Brugiere, Enc. Méth. Dict., No. 64.

Hab. Islands of Ticao and Masbate, Philippines (on the trees); Cuming.

Distinguished by its oval ventricose growth and broad spiral bands of colour.

Species 57. (Mus. Cuming.)

BULIMUS VELATUS. *Bul. testā oblongā, sub-Pupæformi, anfractibus senis, subrotundis, aperturā parviusculā, labro simplici; lutescente-albā, zonulā rufo-fuscescente*

cingulatá, epidermide tenui, albicante, strigas longitudinales subindistinctè prætermittente, peritremate rufo-fusco.

THE CLOTHED BULIMUS. Shell oblong, somewhat Pupa-shaped, whorls six in number, subrotund, aperture rather small, lip simple; yellowish white, encircled with a narrow red-brown zone, epidermis thin, whitish, leaving somewhat indistinctly longitudinal streaks, peritreme red-brown.

BRODERIP, Pro. Zool. Soc., 1841, p. 15.

Hab. Island of Camote, Philippines (on the leaves of trees); Cuming.

Of this species Mr. Cuming only collected three specimens, and these appear to be of somewhat immature growth. It is not distinguished by any marked peculiarity of character.

Fig. 58. (Mus. Cuming.)

This shell was named in Mr. Cuming's collection *B. nebulosus*, but as I am doubtful of its being a variety of the *B. calista*, it may for the present be referred to that species. For Sp. 58, see Pl. XIII.

Species 59. (Mus. Cuming.)

BULIMUS PYRAMIDALIS. *Bul. testá oblongo-pyramidalis, apice obtusá, anfractibus senis, subrotundis, aperturá parviusculá, labro simplici; fulvâ, basin versus suturisque nigricante-castaneâ, epidermide tenui indutâ, columellâ albâ, peritremate fusco.*

THE PYRAMIDAL BULIMUS. Shell oblong-pyramidal, obtuse at the apex, whorls six in number, somewhat

round, aperture rather small, lip simple; yellowish, blackish chesnut towards the base and in the sutures, covered with a thin epidermis, columella white, peritreme brown.

Helix pyramidalis, Sowerby, Pro. Zool. Soc., 1841, p. 39.

Hab. Island of Cuyo, Philippines (upon the leaves of trees); Cuming.

The colour of this shell is a dark burnt brown, with traces of a light puckered epidermis beneath the sutures. It may be readily distinguished by this and its pyramidal growth.

Species 60. (Mus. Cuming.)

BULIMUS ACUMINATUS. *Bul. testá subpyramidalis-ovatâ, apice acuminatâ, anfractibus quinis, convexis, ultimo obscure subangulato, labro tenui, vix reflexo; lutescente-brunneâ, zonulâ castaneâ cingulatâ, epidermide tenui indutâ, columellâ albâ, peritremate rufo-fusco.*

THE ACUMINATED BULIMUS. Shell somewhat pyramidally ovate, spire acuminate, whorls five in number, convex, the last obscurely slightly angled, lip thin, but slightly reflected; yellowish-brown, encircled by a narrow chesnut zone, covered with a thin epidermis, columella white, peritreme red-brown.

Helix acuminata, Sowerby, Pro. Zool. Soc., 1841, p. 39.

Hab. Island of Cuyo, Philippines (upon the leaves of trees); Cuming.

Of a peculiar yellowish-brown colour encircled by a narrow zone of red-brown and stained with very dark chesnut round the columella. It differs from *B. incomptus* only in form, its general aspect and colouring are the same.



BULIMUS.

PLATE XII.

Species 61. (Mus. Cuming.)

BULIMUS CUMINGII. *Bul. testá ovatá, spirá subobtusá, anfractibus quinque, obliquè tenuistriatis, ultimo infernè indistinctè obtusè angulato, columellá planá, intortá; pellucido-albá, nitidá, basin versus virescente, lineá castaneá conspicuá infra suturas circumdatá, columellá purpureo-fuscá, peritremate albo.*

CUMING'S BULIMUS. Shell ovate, spire rather obtuse, whorls five in number, finely obliquely striated, the last indistinctly obtusely angled round the lower part, columella flat, twisted; transparent white, shining, greenish towards the base, surrounded by a conspicuous chesnut line beneath the sutures, columella purple-brown, peritreme white.

PFEIFFER, Pro. Zool. Soc., 1842, p. 88.

Hab. Island of Camiguin, Philippines (on leaves of trees); Cuming.

A transparent shining opal-like shell, peculiarly characterized by a dark chesnut line running beneath the sutures.

Species 62. (Mus. Cuming.)

BULIMUS VERECUNDUS. *Bul. testá ovatá, tenuiculá, ventricosá, anfractibus quinque, convexis, tumidis, columellá rectá, labro tenui, vix reflexo; albá, fasciis carneo-fuscescentibus latis interruptis cingulatá, peritremate carneo-fuscescente.*

THE MODEST BULIMUS. Shell ovate, rather thin, ventricose, whorls five in number, convex, swollen, columella straight, lip thin, very slightly reflected; white, encircled by broad interrupted light flesh-brown bands, peritreme flesh-brown.

Helix modesta, Sowerby, Pro. Zool. Soc., 1841, p. 39.

Hab. Catanauan, Province of Tayabas, Island of Luzon (on the leaves of trees); Cuming.

The adoption of this delicate species under the type of *Bulimus* imposes the necessity of substituting a new specific name, that of *modestus* being already occupied.

Species 63. (Mus. Cuming.)

BULIMUS SIMPLEX. *Bul. testá ovato-conoideá, anfractibus quinque, convexis, columellá subintortá, labro subeffuso, reflexo; albá, basin versus viridescente, epidermide tenui, corneá.*

THE SIMPLE BULIMUS. Shell ovately conoid, whorls five in number, convex, columella slightly twisted, lip somewhat effused, reflected; white, greenish towards the base, with a very thin horny epidermis.

JONAS, Pro. Zool. Soc., 1842, p. 189.

Hab. Island of Mindoro, Philippines.

The green colouring of this species seems to reside in great measure in its thin horny epidermis.

Species 64. (Mus. Cuming.)

BULIMUS EFFUSUS. *Bul. testá ovatá, basin versus ventricosá, effusá, anfractibus quinque, convexis, columellá vix arcuatá, labro sublatè reflexo; albá, nitidá, zonulis duabus castaneis conspicuè cingulatá, epidermide tenui corneá lutescente infernè indutá.*

THE EFFUSED BULIMUS. Shell ovate, ventricose and effused towards the base, whorls five in number, convex, columella scarcely arched, lip somewhat broadly reflected; white, shining, sometimes conspicuously encircled with two narrow chesnut zones, covered at the lower part with a thin yellowish horny epidermis.

PFEIFFER, Pro. Zool. Soc., 1842, p. 152.

Hab. Island of Tablas, Philippines (on the leaves of trees); Cuming.

This shell approaches rather to the *Helix decipiens* in form and general aspect than to the *B. Cumingii*, with which Dr. Pfeiffer compares it, and might be referred to that genus with almost equal propriety.

Species 65. (Mus. Cuming.)

BULIMUS BREVICULUS. *Bul. testá crassiusculá, peculiariter abbreviato-pyramidalí, apice obtusá, anfractibus sex, angustis, aperturá parvâ, labro sublatè reflexo; albá, epidermide luteo-fuscescente.*

THE SHORTENED BULIMUS. Shell rather thick, peculiarly abbreviately pyramidal, obtuse at the apex, whorls six in number, narrow, aperture small, lip rather widely reflected; white, epidermis yellowish brown.

PFEIFFER, Pro. Zool. Soc., 1842, p. 88.

Hab. Island of Romblon, Philippines (on bushes); Cuming.

May, 1848.

The shell is not in very good condition and only a vestige of the epidermis remains near the aperture.

Species 66. (Mus. Cuming.)

BULIMUS LEAI. *Bul. testā ovato-conoideā, solidiusculā, spirā subobtusā, anfractibus quinque, rotundatis, columellā sub-planā, labro reflexo; albā, epidermide tenui stramineā indutā.*

LEA'S BULIMUS. Shell ovately conoid, rather solid, spire somewhat obtuse, whorls five in number, rounded, columella rather flattened, lip reflected; white, covered with a thin straw-coloured epidermis.

PFEIFFER, Pro. Zool. Soc., 1846, p. 29.

Hab. Philippine Islands.

A shell of simple character though not exactly agreeing with any other species.

Species 67. (Mus. Cuming.)

BULIMUS STABILIS. *Bul. testā cylindraceo-ovatā, crassiusculā, basi effusā, anfractibus sex, plano-convexis, angustis, aperturā obliquā, labro fortiter reflexo; albā, anfractuum parte inferiori intensè ustulato-castaneā, peritremate albo.*

THE FIRM BULIMUS. Shell cylindrically ovate, rather thick, effused at the base, whorls six in number, flatly convex, narrow, aperture oblique, lip strongly reflected; white, lower part of the whorls deep burnt chesnut, peritreme white,

Helix stabilis, Sowerby, Pro. Zool. Soc., 1840, p. 104.

Hab. Isle of Temple, Philippines; Cuming.

A solid Pupiform shell, approximating in some degree to the *B. ovoideus* but of more solid structure and very peculiar in its style of colouring.

Species 68. (Mus. Cuming.)

BULIMUS BULLULA. *Bul. testā ovato-conoideā, anfractibus quatuor, convexis, aperturā subeffusā, labro vix reflexo; cærulescente-albā diaphanā, aut flavicante, apice pallidè rubido.*

THE LITTLE BUBBLE BULIMUS. Shell ovately conoid, whorls four in number, convex, aperture somewhat effused, lip slightly reflected; transparent bluish white or yellowish, pale ruddy colour at the apex.

BRODERIP, Pro. Zool. Soc., 1840, p. 159.

Hab. Puerto Galero, Island of Mindoro, Philippines; Cuming.

A most delicately coloured species of a transparent opal white tinged with red at the apex.

Species 69. (Mus. Cuming.)

BULIMUS DILATATUS. *Bul. testā crassiusculā, abbreviato-pyramidali, subventricosā, anfractibus sex, angustis, columellā plano-dilatatā, aperturā parviusculā; nigricante-purpureā, apicem versus rufescente, epidermide fuscā, hydrophanā, columellā et aperturæ fauce albis, peritremate nigricante-purpureo marginato.*

THE DILATED BULIMUS. Shell rather thick, abbreviately pyramidal, somewhat ventricose, whorls six in number, narrow, columella flatly dilated, aperture rather small; blackish-purple, reddish towards the apex, with a brown hydrophanous epidermis, columella and interior white, peritreme edged with purple-black.

PFEIFFER, Pro. Zool. Soc., 1846, p. 42.

A solid contracted pyramidal shell approaching somewhat in form to the *B. leucophæa*; and the hydrophanous epidermis, of which this specimen exhibits the remains, appears to be abraded in patches beneath the sutures as in that species.

Singularly allied in form to the *B. dilatatus*, which is of a dark purple-brown colour, but somewhat less ventricose.



55
58



70.



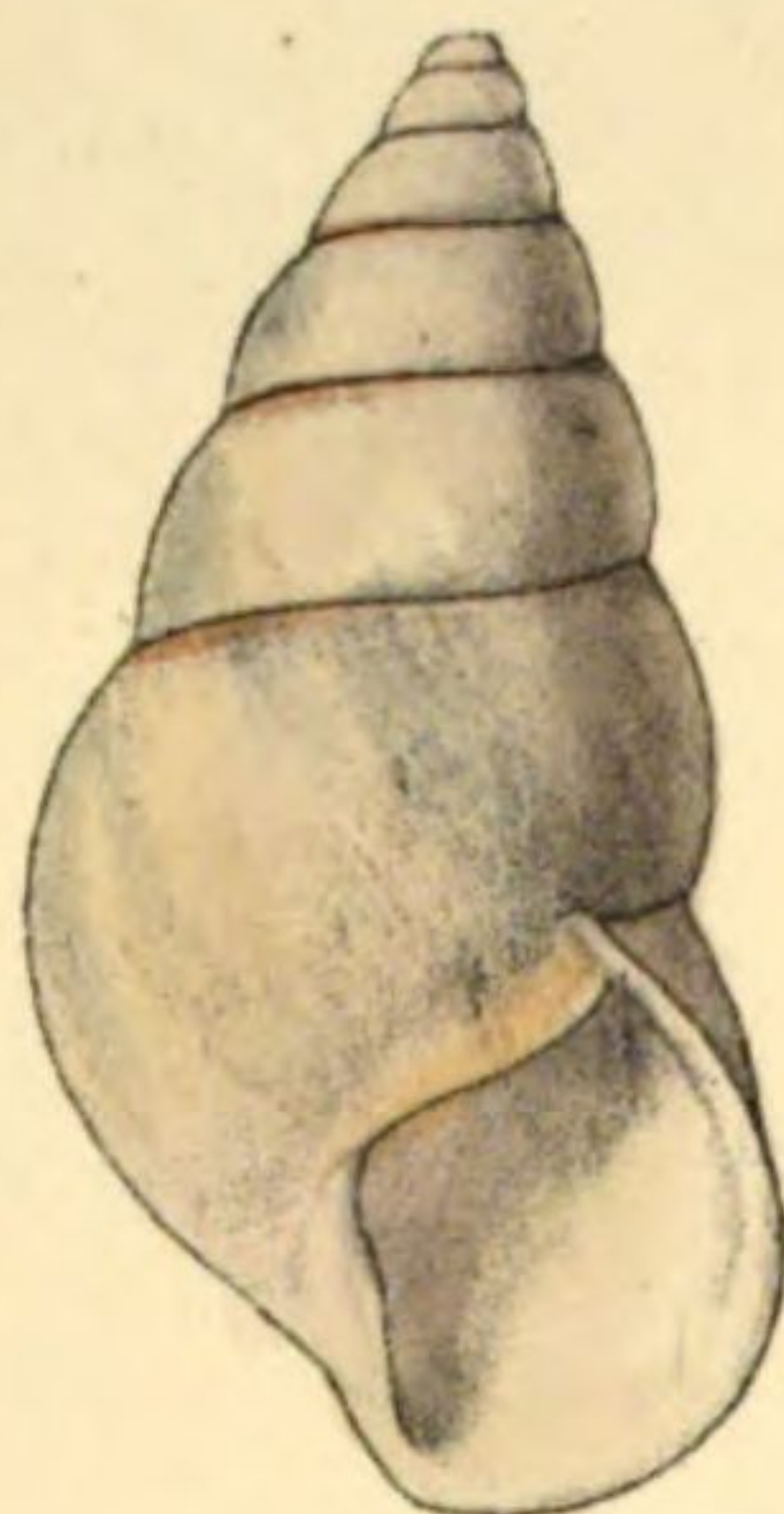
72.



71.



73. a



74.



73. b.



73. c.



75.



73. d.

BULIMUS.

PLATE XIII.

Species 58. (Mus. Cuming.)

BULIMUS ZONULATUS. *Bul. testá conico-oblongá, tenui, umbilicatá, anfractibus convexis, lævibus, labro columellari reflexo, umbilicum ferè occultante, externo simplici; pallidè opaco-stramineá, macularum pellucidarum seriebus duabus cinctá, anfractu ultimo zonulis duabus castaneis ornato.*

THE FINELY ZONED BULIMUS. Shell conically oblong, thin, umbilicated, whorls convex, smooth, columellar lip reflected so as almost to conceal the umbilicus, outer lip simple; pale opaque straw-colour, encircled by two rows of transparent spots, last whorl ornamented with two narrow chesnut zones.

PFEIFFER, Pro. Zool. Soc., 1846, p. 41.

Hab. Cabanatuan, Province of Nueva Eaja, Island of Luzon; Cuming.

There is a very singular character attending this species; the shell is of a thin transparent horny substance, covered by an opaque straw-coloured layer except in those places by which the pattern is produced, the spots have thus an appearance, so to speak, of little windows in the shell.

Species 70. (Mus. Cuming.)

BULIMUS PANAMENSIS. *Bul. testá oblongo-ovatá, tenui, vix umbilicatá, anfractibus quinque convexis, lævibus, aperturá parviusculá, labro simplici; pallidè fulvá, diaphaná.*

THE PANAMA BULIMUS. Shell oblong-ovate, thin, slightly umbilicated, whorls five in number, smooth, aperture rather small, lip simple; pale fulvous colour, diaphanous.

BRODERIP, Pro. Zool. Soc., 1832, p. 105.

Hab. King's and Saboga Islands, Bay of Panama (on the trunks of large trees); Cuming.

The form of this shell is extremely simple, and its colour a semi-transparent nankeen.

Species 71. (Mus. Cuming.)

BULIMUS TRANSLUCENS. *Bul. testá oblongo-ovatá, tenui, valdè pellucidá, vix umbilicatá, anfractibus quinque, subventricosis, lævibus aut transversim et longitudinaliter minutè striatis, labro simplici; corneo-lutescente.*

THE TRANSPARENT BULIMUS. Shell oblong-ovate, thin,

very pellucid, slightly umbilicated, whorls five in number, smooth or transversely and longitudinally minutely striated, lip simple; pale horny yellow.

BRODERIP, Pro. Zool. Soc., 1832, p. 31.

Hab. King's and Saboga Islands, Panama (upon the trees); Cuming.

Of a beautiful transparent glassy structure, through which the internal winding of the columella may be plainly seen. It is very similar in form to the *B. Panamensis*, and is from the same locality.

Species 72. (Mus. Cuming.)

BULIMUS EVANESCENS. *Bul. testá subabbreviato-pyramidalí, apice obtusá, anfractibus quinque, convexis, lævibus, nitidiusculis, aperturá parviusculá, labro reflexo; virescente-albá, subdiaphaná, lineá nigrá infra suturas, parte circa columellam conspicuè nigrá.*

THE EVANESCENT BULIMUS. Shell somewhat abbreviately pyramidal, obtuse at the apex, whorls five in number, convex, smooth, rather shining, aperture somewhat small, lip reflected: greenish white, subdiaphanous, with a black line beneath the sutures, and the part around the columella conspicuously black.

PFEIFFER, (inedit?).

Hab. Philippine Islands; Cuming.

A delicate semi-transparent shell easily recognised by the black line between the sutures, and broader band around the columella.

Species 73. (Mus. Cuming.)

BULIMUS ADAMSII. *Bul. testá ovato-turritá, sinistrali, anfractibus convexis, lævibus, aperturá parviusculá, labro reflexo; virescente aut luteá, maculis irregularibus subquadratis, nigricante-viridibus medio confertim uniseriatim cinctá, interdum immaculatá, parte circa columellam purpureo-roseá.*

ADAMS' BULIMUS. Shell ovately turreted, sinistral, whorls convex, smooth, aperture rather small, lip reflected; greenish or yellow, encircled round the middle with a row of close-set irregular somewhat square blackish green spots, sometimes unspotted, the part around the columella purple-rose.

Hab. Eastern Coast of Borneo (on a tall tree in an islet between Banguay and Balambangan); Adams.

An interesting new species discovered by Mr. Arthur Adams, at the above mentioned locality, during the recent expedition of H.M.S. Samarang. "A tree, partially cut through at the base with axes," says the author of the valuable summary of Natural History attached to the Narrative of that Voyage, "fell upon one of the carpenters working on the island, depriving him at the time of sensation. What proved a misfortune to the man, however, presented to science a new and beautiful species of *Bulimus*, which I discovered in considerable numbers and variety adhering to the prostrate tree." All the specimens were reversed, of a yellow or yellowish green colour, stained with purple rose about the columella, and mostly encircled round the middle by a chain of square greenish spots.

Species 74. (Mus. Cuming.)

politus
BULIMUS EBURNEUS. *Bul. testā pyramidalis-oblongā, anfractibus sex, rotundatis, lævibus, politis, labro reflexo; eburneā, epidermide tenuissimā stramineā partim indutā.*

THE IVORY BULIMUS. Shell pyramidally oblong, whorls six in number, rounded, smooth, polished, lip reflected; ivory white, partially covered with a very slight straw-coloured epidermis.

Bulimus Diana var., Broderip.

Hab. — ?

Mr. Broderip has, I think erroneously, considered this shell a variety of *B. Diana*; in form it differs in the whorls being more rounded, whilst it is of thinner texture and of a pure diaphanous white, the surface being characterized by an extremely delicate natural polish.

Species 75. (Mus. Cuming.)

BULIMUS ERYTHROSTOMA. *Bul. testā subgloboso-ovatā, umbilicatā, anfractibus quinque rotundatis, concentricè rudè striatis, columellā sublatè reflexā, labro simplici; opaco-albā, columellā apice et aperturae fauce roseis.*

THE RED-MOUTH BULIMUS. Shell somewhat globosely ovate, umbilicated, whorls five in number, rounded, concentrically rudely striated, columella rather widely reflected, lip simple; opaque-white, columella, apex, and interior of the aperture rose-pink.

SOWERBY, Pro. Zool. Soc., 1833. p. 37.

Hab. Huasco, Chili (under bushes); Cuming.

Of a peculiar bluish opaque white having the columella, apex, and aperture coloured with a delicate rose-pink.



77.



76.



78.



79.



80.



82.



81.



83.



84.



85.

BULIMUS.

PLATE XIV.

Species 76. (Mus. Cuming.)

BULIMUS PANAYENSIS. *Bul. testá elongato-turritá, lævigatá, pellucidá, apice obtusá, anfractibus octo, aperturá minimá, labro simplici; cereo-albidá.*

THE PANAY BULIMUS. Shell elongately turreted, smooth, pellucid, obtuse at the apex, whorls eight in number, aperture very small, lip simple; waxen white.

PFEIFFER, Pro. Zool. Soc., 1846, p. 33.

Hab. Dingle, Isle of Panay, Philippines; Cuming.

This is the smallest species collected by Mr. Cuming at the Philippines, it is of an elongately turreted form and of a hyaline waxen white.

Species 77. (Mus. Cuming.)

BULIMUS RHODACME. *Bul. testá oblongo-ovatá, umbilicatá, anfractibus sex, minutè autem conspicuè striatis, striis transversis subobsoletis minutissimè decussato-granulatis, labro simplici; opaco-albidá, maculis flammulisque roseis subpellucidis versus apicem.*

THE RED-TIPPED BULIMUS. Shell oblong-ovate, umbilicated, whorls six in number, minutely but conspicuously striated, and very minutely decussated with somewhat obsolete transverse striæ, lip simple; opaque-white, with semitransparent rose-tinted spots and flames towards the apex.

PFEIFFER, Pro. Zool. Soc., 1842, p. 187.

Hab. Frierina, Huasco, Chili (under small *Cacti*); Bridges.

A delicate species of a seemingly transparent texture, enveloped, save about the apex, with an opaque-white coating.

Species 78. (Mus. Cuming.)

BULIMUS MICRA. *Bul. testá subelongatá, vix umbilicatá, semipellucidá, anfractibus subrotundatis, creberrimè concentricè striatis, spiræ suturis peculiariter impressis, aperturá parvâ, labro simplici; corneo-albidá.*

THE SMALL BULIMUS. Shell rather elongated, slightly umbilicated, semipellucid, whorls somewhat rounded, very closely concentrically striated, sutures of the spire peculiarly impressed, aperture small, lip simple; horny white.

D'ORBIGNY, Voy. dans l'Amér. mérid. Moll. p. 262. pl. 41. f. 18 to 20.

Hab. Eastern side of the Bolivian Andes, near Santa Cruz (under stones), D'Orbigny; near Chilon, Bolivia (on the dead trunks of *Cacti*); Bridges.

A very small semitransparent shell, thickly sculptured with rude concentric striæ.

Species 79. (Mus. Cuming.)

BULIMUS TEREBRALIS. *Bul. testá elongatá, subcylindraceá, latè angulato-umbilicatá, spiræ suturis impressis, anfractibus decem ad undecem, plano-convexis, obliquè crebrè corrugato-striatis, columellâ subconcavo-effusâ, aperturá minimá, peritremate dilatato; fuscescente-albâ, apicem versus nigricante.*

THE AUGUR-LIKE BULIMUS. Shell elongated, somewhat cylindrical, broadly angularly umbilicated, sutures of the spire impressed, whorls ten to eleven in number, flatly convex, obliquely closely striated in a wrinkled manner, columella concavely effused, aperture very small, peritreme dilated; brownish-white, blackish towards the apex.

PFEIFFER, Pro. Zool. Soc., 1842, p. 187.

Hab. Coquimbo, Chili (on rocks and plants near the sea); Bridges.

Distinguished from the *B. Pupiformis* to which it is most nearly allied, by its obliquely corrugated striæ, widely angulated umbilicus, and neat dilated aperture.

Species 80. (Mus. Cuming.)

BULIMUS ELONGATULUS. *Bul. testá elongatá, anfractibus octo, latiusculis, plano-convexis, subepidermide tenuissimè et creberrimè striatis, aperturá parvâ, supernè subcontractâ, labro simplici; stramineo-albidâ, subpellucidâ.*

THE ELONGATED BULIMUS. Shell elongated, whorls eight in number, rather broad, flatly convex, very finely and closely striated, aperture small, somewhat contracted towards the upper part; pale straw-colour, semitransparent.

PFEIFFER, Pro. Zool. Soc., 1846, p. 42.

Hab. Catanaun, Province of Baie, Island of Luzon, Philippines (at the roots of trees); Cuming.

The whorls of this species are each slightly contracted round the upper part.

June, 1848.

Species 81. (Mus. Cuming.)

BULIMUS GRATELOUPI. *Bul. testá elongato-ovatá, tenui, pellucidá, anfractibus sex ad septem, lævibus, nitidis, aut concentricè subtilissimè striatis, columellá reflexá, labro simplici, arcuato, supernè sinuato; corneo-stramineá.*

GRATELOUP'S BULIMUS. Shell elongately ovate, thin, pellucid, whorls six to seven in number, smooth, shining, or concentrically very finely striated, columella reflected, lip simple, curved, sinuated at the upper part; horny straw-colour.

PFEIFFER, Pro. Zool. Soc., 1846, p. 42.

Hab. Islands of Luzon and Panay, Philippines (at the roots of trees); Cuming.

A transparent horny shell very finely marked throughout with concentric striæ of growth, resulting from the curved structure of the lip.

Species 82. (Mus. Cuming.)

BULIMUS COCHLEADES. *Bul. testá elongatá, anfractibus novem, latiusculis, lævibus, convexis, aperturá parvâ, supernè contractâ, labro simplici; albidâ.*

THE SPOON-LIKE BULIMUS. Shell elongated, whorls nine in number, rather broad, smooth, convex, aperture small, slightly contracted at the upper part, lip simple; whitish.

Hab. Island of Cuyo, Philippines; Cuming.

This singular species, it may be observed, is represented of the natural size, whilst the rest of the plate are all more or less magnified. Mr. Cuming only collected this solitary specimen, which is quite unapproached by any other. It is of extremely simple structure.

Species 83. (Mus. Cuming.)

BULIMUS LICHENORUM. *Bul. testá oblongo-turritá, umbilicatá, anfractibus septem, subrotundatis, lævibus aut tenuistriatis, columellá reflexá, aperturá parviusculá, labro simplici; cærulescente-albâ, strigis perpaucis cinereis obliquis, apice nigricante.*

THE LICHEN BULIMUS. Shell oblong-turreted, whorls seven in number, somewhat rounded, smooth or finely striated, columella reflected, aperture rather small, lip simple; bluish-white, with a few oblique ashy streaks, apex blackish.

D'ORBIGNY, Voyage dans l'Amér. mérid. Moll. p. 264. pl. 41. f. 9 to 11.

Hab. Cobija (on lichens); D'Orbigny. Chilon, Bolivia (under dead trunks of *Cacti*); Bridges.

It is not without some doubt that I venture to refer this shell to the above named species of D'Orbigny; yet it accords sufficiently with his description and figure.

Species 84. (Mus. Cuming.)

BULIMUS SCABIOSUS. *Bul. testá elongato-oblongá, anfractibus septem, convexis, peculiariter interruptè sulcatis et striatis, columellá reflexá, aperturá parvâ, labro simplici; albidâ, rufo-fuscescente strigatâ et marmoratâ, apicem versus nigricante.*

THE SCURVY BULIMUS. Shell elongately oblong, whorls seven in number, convex, peculiarly grooved and striated in an interrupted manner, columella reflected, aperture small, lip simple; whitish, streaked and marked with light reddish-brown, blackish towards the apex.

SOWERBY, Pro. Zool. Soc., 1833, p. 74.

Hab. Cobija, Peru (under stones); Cuming.

Mainly distinguished by a roughened peculiarity of sculpture which appears to have suggested the above name to Mr. Sowerby, though no mention is made of it in his description.

Species 85. (Mus. Cuming.)

BULIMUS PUPIFORMIS. *Bul. testá cylindraceo-elongatá, anfractibus decem, convexis, lævibus aut tenuistriatis, ad suturas minutè crenulatis, columellá reflexá, aperturá parvâ, labro simplici, subdilato; cinereo-albidâ, apicem versus nigricante.*

THE PUPA-SHAPED BULIMUS. Shell cylindrically elongated, whorls ten in number, convex, smooth or finely striated, minutely crenulated at the sutures, columella reflected, aperture small, lip simple, slightly dilated; ashy white, blackish towards the apex.

BRODERIP, Pro. Zool. Soc., 1832, p. 105.

Hab. Huasco, Chili (under stones in shady places); Cuming.

It is important to observe the minute sutural crenulations which characterize this species, as Mr. Broderip appears to have overlooked them.



86. a.



86. b.



86. c.



87. a.



88.



87. b.



89. a.



90.



89. b.

BULIMUS.

PLATE XV.

Species 86. (Fig. *a, b, c*, Mus. Cuming.)

BULIMUS TUPACII. *Bul. testá oblongo-vel elongato-ovatá, subumbilicatá, ventricosá, anfractibus septem, concentricè fortiter et irregulariter striatis, per marginem superiorem plus minusve crenatis, labro vix reflexo; olivaceo-brunnéá, interdum quinquefasciatá, raro flavicante, columellá labroque albis,*

TUPAC'S BULIMUS. Shell oblong or elongately ovate, slightly umbilicated, ventricose, whorls seven in number, concentrically strongly and irregularly striated, more or less crenated along the upper margin, lip scarcely reflected; olive-brown, sometimes five-banded, rarely pale yellow, lip and columella white.

D'ORBIGNY, Voy. dans l'Amer. Mérid. p. 292. pl. 38. f. 1 to 5.

Hab. Provinces of Yungas, Sicasica, and Ayupaya, Bolivia (found on garden walls and on bushes at an elevation of more than 9000 feet); D'Orbigny, Bridges.

The growth of this species varies, as represented by the specimens figured, from a swollen oblong shape to a more elongated form. Sometimes the shell is banded, and it is always more or less crenulated along the margin next the sutures. The colour is mostly a dull livid olive brown, but the specimen Fig. *c*, collected by Mr. Bridges, is a pale yellow.

Species 87. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS ROSACEUS. *Bul. testá oblongo-ovatá, crassiusculá, ventricosá, striatá aut sub lente minutissimè granulatá, spirá obtuso-depressá, anfractibus quinque, per marginem superiorem plus minusve crenulatis, labro latiusculo, reflexo; olivaceo-viridi, apicem versus rosaceá, epidermide tenuissimá sæpe marmoratá, columellá labroque albidis, interdum rosaceo-aurantiis.*

THE ROSE-COLOURED BULIMUS. Shell oblong ovate, rather thick, ventricose, striated or very minutely granulated under the lens, spire obtusely depressed, whorls five in number, more or less crenulated along the upper margin, lip rather broad, reflected; olive-green, rose-coloured towards the apex, frequently marbled with a very light epidermis; lip and columella white, sometimes rose-orange.

KING, Zool. Journ. vol. v. p. 341.

Varietates.

Bulimus Chilensis, Broderip (not of Lesson).

Bulimus pachycheilus, Pfeiffer.

Hab. Chili (under stones and in the sand); King, Cuming, D'Orbigny. Bolivia (under trunks of trees); Bridges.

The *B. rosaceus* inhabits a wide range of country and is found in very different states. The variety Fig. *a*, which may be regarded as the typical form, inhabits the environs of Valparaiso; that represented at Fig. *b*, distinguished by its rude concentric striæ, strong crenulations, and warm orange colouring of the lip and interior, was collected in great plenty and with little or no variation at Huasco, Chili; and at Cocapata, Bolivia, a variety of still larger size occurs of thin light growth with scarcely any indication of crenulations or striæ. At Huasco, the species was also collected by Mr. Bridges in a state quite distinct from these, of much smaller dimensions, paler in colour, and of a minutely granulated satiny hue. This is the *B. pachycheilus* of Pfeiffer, and apparently the shell from Bahia Blanca taken by D'Orbigny for the *B. nucleus* with which he does not seem to be acquainted. Another condition of the *B. rosaceus* is that of similar size from Coquimbo, described by Mr. Sowerby as a distinct species under the name *B. Chilensis*. It should be observed that the eggs of these smaller species are of a more oblong form than those of the first mentioned.

Species 88. (Mus. Cuming.)

BULIMUS PHASIANELLUS. *Bul. oblongo-ovatá, crassiusculá, anfractibus quinque, ventricosis, leviter striatis, per marginem superiorem in anfractu ultimo et penultimo crenulatis, columellá subintortá, labro incrassato, reflexo; violascente-griseá, maculis transversis parvis numerosis irregularibus violaceo-fuscescentibus pictá, columellá labroque intensè violaceis.*

THE PHEASANT-MARKED BULIMUS. Shell oblong-ovate, rather thick, whorls five in number, ventricose, slightly striated, crenulated along the upper margin in the last and penultimate whorls, columella a little twisted, lip thickened, reflected; violet-grey, painted with numerous irregular small transverse blotches of violet-brown, lip and columella deep violet.

May, 1848.

VALENCIENNES, Humboldt, Zool. v. ii. p. 244. pl. 55. f. 4.

Bulimus iostoma, Sowerby.

Hab. Chili and Peru (on trees); Cuming.

At the Isle of Plata Mr. Cuming found this beautiful and well known species in such abundance upon trees stripped of their leaves, that they looked as if laden with fruit. The animal yields a rich purple juice.

Species 89. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS PORPHYRIUS. *Bul. testā subelongato-ovatā, spirā acuminatā, anfractibus sex, concentricè rudè et irregulariter elevato-striatis, per marginem superiorem hic illic minutè crenulatis; fumeo-fuscā, striis concentricis hic illic albis.*

THE PORPHYRY BULIMUS. Shell somewhat elongately ovate, spire acuminate, whorls six in number, concentrically, rudely, and irregularly elevatedly striated, and minutely crenulated here and there along the upper margin; smoky brown, concentric striae here and there white.

PFEIFFER, Zool. Pro. Soc. 1846. p. 114

Hab. —?

The growth of this shell not being completed, it is impossible to say whether the lip would remain simple or be reflected at maturity. It is a very characteristic species and cannot easily be confounded with any other; the white ridge-like striae have a rubbed appearance and being on a dark ground have a very peculiar aspect. Mr. Cuming has no information as to its locality.

Species 90. (Mus. Cuming.)

BULIMUS ZEBRA. *Bul. testā ovatā, tenuiculā, imperforatā, ventricosā, spirā acuminatā, anfractibus subrotundatis laevibus, columellā rectā, labro simplici; viridi, flammis strigisque minoribus peculiariter undatis flavicantibus ornatā, columellā albā, labro intus castaneo-marginato.*

THE ZEBRA BULIMUS. Shell ovate, rather thin, imperforated, ventricose, spire acuminate, whorls somewhat rounded, smooth, columella straight, lip simple; green, ornamented with peculiarly waved flames and lesser streaks of yellow, columella white, lip edged internally with chesnut.

Buccinum zebra, Muller, Verm. Terr. et Fluv. Hist. p. 138.

Bulimus undatus, Bruguière.

Varietates.

Bulimus zigzag, Lamarck.

Bulimus princeps, Sowerby.

Hab. Nicaragua, Panama, Costa Rico, Veragua, Pernambuco, West Indies.

Few species of the genus affect a wider range of country than the present, and it is owing to the different aspects under which it is found, that the above-recorded synonymes have arisen. The beautiful variety figured in the Conchological Illustrations under the name *B. princeps* was collected by Mr. Cuming in the woods of Nicaragua where it inhabits the hollows of trees; the more common variety, known as the *B. undatus*, is found in the West Indies and Brazil, and, extremely rich in colour, at Panama and Costa Rico.



91. b.



91. a.



92.



94.



93.



95.



92. b.



96.



92. c.



97.

BULIMUS.

PLATE XVI.

Species 91. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS PÆCILUS. *Bul. testā elongato-ovatā, tenui, ventricosā, subumbilicatā, spirā acuminatā, anfractibus sex aut septem, longitudinaliter striatis, labro tenui, simplici; albidā, fuscescente tinctā, cæruleo-nigricante variè fasciatā aut maculatā aut punctatā, apice peculiariter nigricante.*

THE VARI-PICTURED BULIMUS. Shell elongately ovate, thin, ventricose, slightly umbilicated, spire acuminate, whorls six or seven in number, longitudinally striated, lip thin, simple; whitish, stained with pale brown and variously banded, or blotched, or dotted with bluish black, apex peculiarly blackish.

D'ORBIGNY, Voyage dans l'Amer. Mérid. p. 286. pl. 31. f. 1 to 10.

Hab. Bolivian Andes, South America (at the roots of shrubs); D'Orbigny, Bridges.

An extremely variable species of which D'Orbigny has considered it necessary to give ten figures, mainly distinguished by its acuminate growth and general disposition of colour.

Species 92. (Mus. Cuming.)

BULIMUS PUNCTULIFER. *Bul. testā oblongo-ovatā, tenuissimā, umbilicatā, anfractibus sex, longitudinaliter striatis, sub lente undique creberrimè plano-granulosis, per marginem superiorem hic illic minutè rudè crenulatis, labro tenui simplici, columellari reflexo; albidā, fusco irregulariter lineatā et punctatā, epidermide flavicante indutā.*

THE DOTTED BULIMUS. Shell oblong-ovate, very thin, umbilicated, whorls six in number, longitudinally striated, under the lens very closely flatly granulated, minutely rudely crenulated here and there along the upper margin, lip thin, simple, the columellar lip reflected back; whitish, irregularly lineated and dotted with brown, covered with a yellowish epidermis.

SOWERBY, Pro. Zool. Soc., 1833, p. 39.

Hab. Chili, La Questa Prada, Cuming; La Questa de Arenos, Huasco, Bridges.

Approaching the *B. granulosus* in form and sculpture, the painting of this shell resembles that of *B. Broderipii*, though easily distinguished by its dotted indefinite style of pattern.

Species 93. (Mus. Cuming.)

BULIMUS RUPICOLUS. *Bul. testā fusiformi-ovatā, tenui, spirā subacutā, anfractibus quinque ultimo maximo, longitudinaliter rudè striatis, undique minutè granulato-rugosis, labro simplici; albidā, maculis longitudinalibus punctisque nigricantibus seriatim pictā, epidermide flavicante indutā.*

THE ROCK-INHABITING BULIMUS. Shell fusiformly ovate, thin, spire rather sharp, whorls five in number, the last very large, longitudinally rudely striated and everywhere minutely granulated rough, lip simple; whitish, painted with rows of black longitudinal blotches and dots, covered with a yellowish epidermis.

Succinea variegata, Pfeiffer, Pro. Zool. Soc., 1842, p. 187.

Hab. Valleys in the north of Coquimbo (in the crevices of rocks); Bridges.

I think Dr. Pfeiffer has greatly erred in referring this group of *Bulimi* to the genus *Succinea*, the type of which is an amphibious animal, like the *Lymnea*, affecting damp and swampy situations, such as the banks of stagnant pools, in marshes, or on floating vegetable matter. The habits of these species are much opposed to this; dwelling in the dry crevices of the rocks which appear in the sandy plains west of the Andes, where there is little or no moisture beyond that which arises from the dews.

The name *variegatus* cannot be adopted, in consequence of its having been used under the head of *Bulimus* by Bruguière in reference to the *Tornatella flammea*.

Species 94. (Mus. Cuming.)

BULIMUS THAMNOICUS. *Bul. testā oblongo-ovatā, tumidiusculā, umbilicatā, anfractibus sex, convexis, undique minutè seriatim granulatis, per marginem superiorem crenulatis; fuscescente, lineis nigricantibus nebulosis irregularibus cingulatā.*

THE SHRUB-INHABITING BULIMUS. Shell oblong-ovate, rather swollen, umbilicated, whorls six in number, convex, minutely granulated throughout in rows, crenulated along the upper margin; light brown encircled with irregular clouded blackish lines.

D'ORBIGNY, Voyage dans l'Amer. Mérid. p. 290. pl. 37. f. 4 to 9.

Hab. Eastern side of the Bolivian Andes, (at the roots of bushes and, during the dry season, in the crevices of rocks); D'Orbigny, Bridges.

May, 1848.

The specimen selected for representation is the Var. *D. marmorata* of D'Orbigny, the larger varieties in which there are none of the transverse lines serving to characterize this, approximate rather to the *B. Tupacii* of the same author.

Species 95. (Mus. Cuming.)

BULIMUS COQUIMBENSIS. *Bul. testā subfusiformi-ovatā, tenuissimā, ventricosā, anfractibus sex, convexis, subobliquis, longitudinaliter rudē striatis, anfractu ultimo maximo, aperturā subamplā, labro simplici; albidā, fusciscente tinctā, punctis maculis strigisque nigricantibus aspersā.*

THE COQUIMBO BULIMUS. Shell somewhat fusiformly ovate, very thin, ventricose, whorls six in number, rather oblique, longitudinally rudely striated, last whorl very large, aperture rather large, lip simple; whitish, stained with light brown, and sprinkled with blackish dots, blotches and streaks.

SOWERBY, Pro. Zool. Soc., 1832, p. 30.

Succinea Coquimbensis, Pfeiffer.

Hab. Mountains of Coquimbo; Cuming.

The painting of this species is also not much unlike that of the *B. Broderipii* from which it differs most essentially in form.

Species 96. (Mus. Cuming.)

BULIMUS PIPERATUS. *Bul. testā ovatā, tenui, valdē inflatā, spirā breviusculā, acuminatā, anfractibus quinque, ultimo maximo, obscurē rugoso-granulatis et striatis, aperturā peramplā, labro vix reflexo; albidā, punctis fuscis perpaucis aspersā, epidermide flavidā indutā.*

THE PEPPERED BULIMUS. Shell ovate, thin, greatly inflated, spire rather short, acuminate, whorls five in number, the last very large, obscurely roughly granulated and striated, aperture very large, lip scarcely reflected; whitish, sprinkled with a yellowish epidermis.

SOWERBY, Conch. Illus. f. 93.

Hab. Hualaga, Peru.

The most inflated of the Succinea-form species, distinguished by a more economical style of painting than its congeners.

Species 97. (Mus. Cuming.)

BULIMUS BRODERIPPI. *Bul. testā ovatā, abbreviato-fusiformi, tenuissimā, valdē inflatā, spirā brevi, anfractibus quinque, ultimo maximo, sub lente minutē granulato-rugosis, aperturā peramplā, labro simplici; albidā, nigro fulvoque conspicuē et elegantissimē maculatā et variegatā.*

BRODERIP'S BULIMUS. Shell ovate, abbreviately fusiform, very thin, greatly inflated, spire short, whorls five in number, the last very large, minutely granulatedly rugose under the lens, aperture very large, lip simple; whitish, conspicuously and very elegantly blotched and variegated with black and fulvous brown.

SOWERBY, Pro. Zool. Soc., 1832, p. 30.

Succinea Broderipii, Pfeiffer.

Hab. Copiapo, Chili (in the fissures of rocks); Cuming.

Much smaller varieties of this species occur than that selected for figuring and more richly coloured; it is an extremely thin and fragile shell.



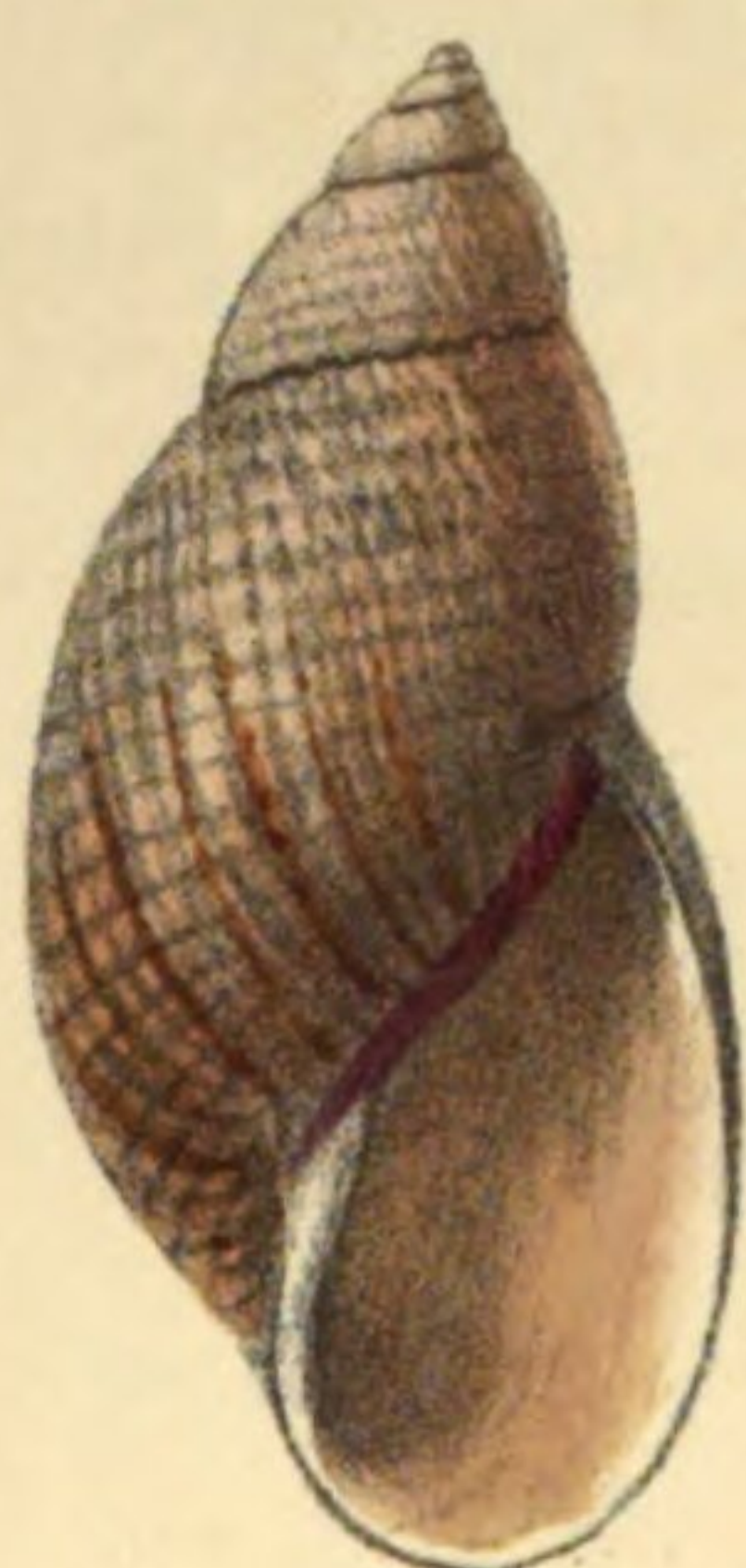
99.



100. a.



100. b.



101. a.



100. c.



101. b.



102.



101. c.



98.

BULIMUS.

PLATE XVII.

Species 98. (Mus. Cuming.)

Bulimus **BULIMUS CULMINANS.** *Bul. testā oblongo-ovatā, tenuiculā, anfractibus sex, subrotundatis, longitudinaliter creberrimè et subrudè striatis, per marginem superiorem subtiliter crenulatis, labro simplici; flavido-olivaceā, apicem versus cinerascēte.*

THE LOFTY-DWELLING BULIMUS. Shell oblong-ovate, rather thin, whorls six in number, somewhat rounded, longitudinally very closely and rather rudely striated, finely crenulated along the upper margin, lip simple; yellowish, faintly olive, pale ash-coloured towards the apex.

D'ORBIGNY, Voy. dans l'Amer. Mérid. p. 289.

Hab. Lake of Titicaca, Bolivia (under stones and at the roots of shrubs upon the mountains); D'Orbigny.

M. D'Orbigny describes this species as inhabiting the most elevated regions of the Bolivian Andes. It is of simple structure and not distinguished by any marked peculiarity of colouring.

Species 99. (Mus. Cuming.)

BULIMUS NUCLEUS. *Bul. testā globoso-ovatā, tenuiculā, ventricosā, vix umbilicatā, sub lente minutissimè granulatā, anfractibus quatuor, rotundatis, labro reflexo; luteo-olivaceā, peritremate vividè aurantio.*

THE KERNEL BULIMUS. Shell globosely ovate, rather thin, ventricose, scarcely umbilicated, very minutely granulated under the lens, whorls four in number, rounded, lip reflected; yellowish olive, peritreme bright orange.

SOWERBY, Conch. Illus., f. 33.

Hab. Maldanao, vicinity of Monte Video.

I doubt very much if the shell which D'Orbigny refers to this species (Voy. dans l'Amer. Mérid. p. 305) is anything more than a variety of *B. rosaceus*. It will be seen by the accompanying figure how much this shell resembles that species, though readily distinguished by its light globose structure and bright orange peritreme.

Species 100. (Fig. a, b, c. Mus. Cuming.)

Bulimus **BULIMUS SORDIDUS.** *Bul. testā ovatā, ventricosā, ampliter umbilicatā, spirā breviusculā, acutā, anfractibus sex, convexis, ultimo maximo, inflato, creberrimè gra-*

nulatis, labro tenui latè effuso; sordidè albā, aurantio-castaneo plus minusve tinctā et fasciatā.

THE DULL BULIMUS. Shell ovate, ventricose, largely umbilicated, spire rather short, acute, whorls six in number, the last very large and inflated, very closely granulated, lip thin, widely effused; dull white, more or less stained or variegated with orange chesnut.

LESSON, Zool. Voy. Coquille, pl. 13. f. 3.

Bulimi Proteus and *mutabilis*, Broderip.

Bulimus Cora, D'Orbigny.

Hab. Mountains of Peru (under stones); Cuming.

The name given to this species by Mr. Broderip is a far more appropriate one on account of its Protean aspect and pretty varieties of painting, than that to which it is entitled. First collected by M. Lesson during the voyage of the Coquille, it is to Mr. Cuming we are mainly indebted for the beautiful varieties obtained in different parts of Peru, St. Jacinta, Pacosmayo, Truxillo, Santos, &c., out of which Mr. Broderip proposed a second species under the name *B. mutabilis*. M. D'Orbigny collected the *B. sordidus* on the arid ridges of the mountain of San-Cristobal near Lima, and I believe his *B. Cora* from the interior of Peru, of which Mr. Cuming possesses authentic specimens, to be only another state of the same species.

Species 101. (Fig. a, b, c. Mus. Cuming.)

BULIMUS PERUVIANUS. *Bul. testā oblongo-ovatā, tenui, imperforatā, spirā subacutā, anfractibus quinque longitudinaliter rudè et irregulariter rugoso-striatis, interdum transversim obscurè punctato-sulcatis, labro simplici, tenuissimo; griseā aut flavidā aut fuscescente, sæpè roseo et cærulescente variegatā.*

THE PERUVIAN BULIMUS. Shell oblong-ovate, thin, imperforated, spire rather sharp, whorls five in number, longitudinally rudely and irregularly rugosely striated, sometimes encircled with obscure punctured grooves, lip simple, very thin; greyish or pale yellow or light brown, frequently variegated with pink or blue.

BRUGUIERE, Dict. Enc. Méth. no. 37.

Bulimi Gravesii and *corrugatus*, King.

Hab. Chili (at the roots of shrubs); Cuming.

There is not much variation in the form of this species, but it differs considerably in colour. The animal, unlike

most of its congeners, brings forth its young alive, and during the dry season incloses itself within the shell by forming an epiphragm.

Species 102. (Mus. Cuming.)

BULIMUS CHILENSIS. *Bul. testā oblongo-ovatā, tenui, subtiliter creberrimè granulatā, spirā subacutā, anfractibus sex, longitudinaliter rudè striatis, labro tenuissimo, simplici; fuscescente, strigis sordidè castaneis longitudinalibus hic illic tinctā.*

THE CHILI BULIMUS. Shell oblong-ovate, thin, finely very closely granulated, spire rather sharp, whorls

six in number, longitudinally rudely striated, lip very thin, simple; light brown, stained here and there with longitudinal dull chesnut streaks.

LESSON, Voy. de la Coquille, pl. 8. f. 3.

Bulimus granulosus, Broderip.

Hab. Valparaiso and Conception, Chili; Cuming.

Although this shell is exactly similar in structure to that of the preceding species, the animal is not viviparous; it is, however, singularly distinguished by the smallness of its eggs, which are like little peas. It inhabits the mountains of Conception, and is found in ravines near the sea-shore as far as Valparaiso. During the dry season it buries itself in the earth, inclosed by an epiphragm. The shell exhibits little variation of form or colouring.



103. a.



104. a.



103. b.



105.



106.



107.



108.



104. b. c.



104. d. e.



109.

BULIMUS.

PLATE XVIII.

Species 103. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS NITIDUS. *Bul. testā pyramidalī-ovatā, tenui, subpellucidā, anfractibus sex, convexis, longitudinaliter fortiter elevato-striatis, aperturā parviusculā, labro simplici; opalescente-lacteā, strigis cærulescente-fuscis longitudinalibus ornatā, apice nigricante.*

THE SHINING BULIMUS. Shell pyramidally ovate, thin, somewhat transparent, whorls six in number, convex, longitudinally strongly elevately striated, aperture rather small, lip simple; opalescent cream-colour, ornamented with longitudinal bluish-brown streaks, apex blackish.

BRODERIP, Pro. Zool. Soc., 1832, f. 31.

Ejusdem var. lactea.

Bulimus cactorius, Broderip.

Hab. Columbia and Peru; Cuming.

Of a delicate opalescent cream-colour with a black apex, and longitudinally streaked with blue-brown, a neat finely corded appearance being imparted to the shell in consequence of the striæ which cross the dark streaks remaining cream-colour. The *B. cactorius* of Broderip is merely a variety having no streaks.

Species 104. (Fig. *a, b, c*. Mus. Cuming.)

BULIMUS VARIANS. *Bul. testā elongatā, tenui, umbilicatā, anfractibus septem, convexis, longitudinaliter hic illic rudè striatis, aperturā parvā, labro simplici, albā aut rubellā, castaneo sæpissimè aut zonulatā aut longitudinaliter variegatā et strigatā.*

THE VARIABLE BULIMUS. Shell elongated, thin, umbilicated, whorls seven in number, convex, longitudinally here and there rudely striated, aperture small, lip simple; white or reddish, most frequently zoned or longitudinally streaked and variegated with chesnut.

BRODERIP, Pro. Zool. Soc., 1832, p. 106.

Ejusdem varietates.

B. pulchellus and *rubellus*.

Hab. On the mountains about Truxillo, Peru; Cuming.

The present is a remarkable instance of the variation of colour and pattern in one species in the same locality. The variety Fig. *a*, (*B. rubellus*, Brod.) is of a simple reddish nankeen colour; Fig. *b*, (*B. pulchellus*, Brod.) is white, reddish towards the apex, encircled by a regular

series of dark brown zones; and Fig. *c*, (*B. varians*, Brod.) is of the same ground tint as Fig. *a*, with the addition of numerous irregular mottled longitudinal purple-brown streaks. All are characterized by a dark band in the umbilicus which is rather large.

Species 105. (Mus. Cuming.)

BULIMUS LEMNISCATUS. *Bul. testā ovatā, ventricosā ampliter umbilicatā, spirā subpyramidalī, acutā, anfractibus septem, rotundatis, lævibus, labro simplici, albidā, vittis fuscis peculiariter interruptis circumdatā, columellā et aperturā fauce roseo.*

THE RIBANDED BULIMUS. Shell ovate, largely umbilicated, spire somewhat pyramidal, sharp, whorls seven in number, rounded, smooth, lip simple; whitish, surrounded by peculiarly interrupted brown fillets, columella and interior of the aperture pink.

DESHAYES, Anim. sans vert. vol. viii. p. 271.

Bulimus vittatus, Broderip (not of Spix).

Hab. Ilo, Peru; Cuming.

The brown bands or fillets which characterize this species are broken up in a peculiar manner into square blotches divided in part by a light transverse dash of white; the columella and interior are pink.

M. D'Orbigny appears to have confounded this and the *B. Hennahii* together; his Fig. 8 (Voy. Amer. Mérid. Pl. 30.) is a variety of the former species, whilst his Fig. 3 and 4 are of the latter.

Species 106. (Mus. Cuming.)

BULIMUS FUSOIDES. *Bul. testā elongatā, basi effusā, anfractibus sex, lævibus, nitidis, columellā obliquè contortā, labro vix reflexo; albidā, strigis cærulescente-fuscis angustis undatis longitudinaliter ornatā, columellā intensè roseo-purpureā, labro albo.*

THE FUSOID BULIMUS. Shell elongated, effused at the base, whorls six in number, smooth, shining, columella obliquely twisted, lip scarcely reflected; whitish, ornamented longitudinally with narrow waved streaks of bluish-brown, columella deep rose-purple, lip white.

D'ORBIGNY, Voyage dans l'Amer. Mérid. p. 215.

Hab. Cacopata, Bolivia (in the woods); Bridges.

May, 1848.

Of this very characteristic and pretty species, collected in perfection by Mr. Bridges, M. D'Orbigny found but two dead specimens in a damp ravine near the banks of the Rio San Mateo, Cochabamba, Bolivia, on the North-East side of the Eastern Cordilleras. It is chiefly remarkable on account of the patulate effused formation of the aperture and deep rose-purple stained columella.

Species 107. (Mus. Cuming.)

BULIMUS TIGRIS. *Bul. testā cylindraceo-elongatā, ampliter umbilicatā, anfractibus septem, lævibus aut subtiliter striatis, labro columellari sublatè expanso, externo simplici, subeffuso; albidā, purpureo-fuscescente latè strigatā.*

THE TIGER BULIMUS. Shell cylindrically elongated, largely umbilicated, whorls seven in number, smooth or finely striated, columellar lip widely expanded, outer lip simple, somewhat effused; white, broadly streaked with purple-brown.

BRODERIP, Pro. Zool. Soc., 1832, p. 107.

Hab. Truxillo, Peru (on bushes on the mountains); Cuming.

Though approximating very closely to the *B. varians*, there is a sufficient variation in the form of this species to render it distinct; the body-whorl is of greater length and the aperture more effused.

Species 108. (Mus. Cuming.)

BULIMUS ONCA. *Bul. testā elongato-oblongā, tenui, subpellucidā, anfractibus quinque, ultimo maximo, obliquis, longitudinaliter striatis, per marginem superiorem leviter crenulatis, labro vix reflexo; violaceo-fulvā, guttis castaneis hic illic aspersā, columellā et aperturæ fauce rosaceis.*

THE JAGUAR BULIMUS. Shell elongately oblong, thin, rather transparent, whorls five in number, the last very large, oblique, longitudinally striated, slightly crenulated along the upper margin, lip scarcely reflected, violaceous fulvous colour, sprinkled here and

there with large chesnut dots; columella and interior of the aperture pink.

D'ORBIGNY, Voyage dans l'Amer. Mérid. p. 295. pl. 30. f. 1 and 2.

Hab. Tutulima, Bolivia.

It is entirely owing to the enterprising spirit of M. Alcide D'Orbigny that we are indebted for the knowledge of this beautiful species. "Desiring to find a more immediate communication," says that intelligent traveller, "between Cochabamba and Moxas, Bolivia, we made a proposition to the Government of that Republic to make the attempt. The President, General Santa Cruz, furnished us with the means to achieve this undertaking. We set out on foot with a party of Indians to carry provisions, and after passing forty days amid the precipices of uninhabited mountains on the north-east side of the Eastern Cordilleras, and enduring a thousand difficulties and privations we accomplished our journey. It was in this excursion not far from Tutulima that we observed the *Bulimus onca* at the bottom of almost inaccessible ravines in damp woody situations, where it is of rare occurrence and difficult to procure, from its habit of burying itself in the earth."

Species 109. (Mus. Cuming.)

BULIMUS MODESTUS. *Bul. testā pyramidali, turritā, ampliter umbilicatā, anfractibus septem, angustis, rotundatis, fortiter et creberrimè concentricè elevato-striatis, labro simplici; fuscescente, apicem versus albidā, striis concentricis albis.*

THE MODEST BULIMUS. Shell pyramidal, turreted, largely umbilicated, whorls seven in number, narrow, rounded, strongly and very closely concentrically elevatedly striated; light brown, whitish towards the apex, striae whitish.

BRODERIP, Pro. Zool. Soc., 1832, p. 106.

Hab. Huacho, Peru, (on small bushes on the mountains); Cuming.

The whorls of this species have rather a tubercular style of growth.



111. a.



110.



111. b.



112.



113.



114.



115.



116. a.



116. b.



117.

BULIMUS.

PLATE XIX.

Species 110. (Mus. Cuming.)

BULIMUS SCUTULATUS. *Bul. testá pyramidalí, turritá, umbilicatá, anfractibus octo, rotundatis, concentricè rudè striatis, aperturá parviusculá, labro simplici; albidá, castaneo plus minusve undique fasciatá.*

THE COBWEB-MARKED BULIMUS. Shell pyramidal, turreted, umbilicated, whorls eight in number, rounded, concentrically rudely striated, aperture rather small, lip simple; whitish, more or less banded throughout with chesnut.

BRODERIP, Pro. Zool. Soc., 1832, p. 106.

Hab. Islay, Port Aréquipa, Peru, on the hills, Cuming; on dry rocks near the shore, D'Orbigny.

M. D'Orbigny speaks of this species as existing in situations where there is not the slightest vegetation or moisture even from the dews.

Species 111. (Mus. Cuming.)

BULIMUS TUMIDULUS. *Bul. testá oblongo-ovatá, tenui, subumbilicatá, spirá breviusculá, acutá, anfractibus septem, supernè plano-convexis, infernè peculiariter rotundato-effusis, labro simplici; albidá, flavo-fuscescente tinctá, lineis castaneis fasciisque singulariter umbratis circumdatá, columellá roseo-purpureá, apice purpureo-fusco.*

THE SWOLLEN BULIMUS. Shell oblong-ovate, thin, slightly umbilicated, spire rather short, acute, whorls seven in number, flatly concave round the upper part, peculiarly rotundately effused round the lower, lip simple; whitish, stained with yellowish brown, encircled with chesnut lines and singularly shaded bands, columella rose-purple, apex purple-brown.

PFEIFFER, MSS., Mus. Cuming.

Bulimus inflatus, Broderip (not of Lamarck), Pro. Zool. Soc., 1836, p. 45.

Hab. Ambo, Peru; Cuming.

An extremely pretty shell differing both in its growth and texture from most of the Peruvian species.

Species 112. (Mus. Cuming.)

BULIMUS ELEGANS. *Bul. testá ovatá, tenuissimá, pellucidá, inflatá, anfractibus quinque, convexis, ultimo*

maximo, labro simplici; rubello-corneá, strigis albis opacis lineisque nigris undatis longitudinaliter pictá.

THE ELEGANT BULIMUS. Shell ovate, very thin, transparent, inflated, whorls five in number, convex, the last very large, lip simple; reddish horny colour, longitudinally painted with waved black lines and opake white streaks.

Succinea elegans, Pfeiffer, Pro. Zool. Soc., 1842, p. 187.

Hab. La Questa de Arenas, Huasco, Chili (found on a small cryptogamic plant); Bridges.

An extremely delicate shell of a thin fragile Succinea-like texture, strikingly painted with opake white streaks and black lines.

Species 113. (Mus. Cuming.)

BULIMUS VERSICOLOR. *Bul. testá pyramidalí-ovatá, ampliter umbilicatá, anfractibus sex, convexis, minutè depresso-granulatis, labro tenui, sublatè reflexo; castaneá, maculis albidis variegatá,*

THE CHANGEABLE-COLOURED BULIMUS. Shell pyramidally ovate, largely umbilicated, whorls six in number, convex, minutely depressly granulated, lip thin, rather widely reflected; chesnut, variegated with whitish spots.

BRODERIP, Pro. Zool. Soc., 1832, p. 108.

Hab. Mongon near Casma, Peru (found on bushes on the mountains); Cuming.

Although this shell varies in its shade and pattern of colour, the specimens all partake more or less of the same red-brown tint which characterizes the *B. Proteus*. In form and sculpture the variation is trifling, and I doubt very much if it should not also be arranged, together with *B. mutabilis*, as a variety of that species.

Species 114. (Mus. Cuming.)

BULIMUS MONTE-VIDENSIS. *Bul. testá pyramidalí-ovatá, tenui, pellucidá, umbilicatá, anfractibus septem, convexis, obliquè irregulariter striatis, labro simplici; pallidè stramineá, corneá, striis opaco-albis.*

THE MONTE-VIDEO BULIMUS. Shell pyramidally ovate, thin, pellucid, umbilicated; whorls seven in number, convex, obliquely irregularly striated, lip simple; pale straw colour, horny, striæ opake-white.

May, 1848.

PFEIFFER, Pro. Zool. Soc., 1846, p. 33.

Hab. Monte Video, Buenos Ayres (on small trees in swampy places); Cuming.

A very delicate transparent species in which the whorls are concentrically marked with fine opake-white striæ.

Species 115. (Mus. Cuming.)

BULIMUS COTURNIX. *Bul. testâ globoso-ovatâ, tenui, inflatâ, vix umbilicatâ, anfractibus quinque, ultimo maximo; labro simplici; fuscescente-albâ, maculis grandibus numerosis ustulato-castaneis tinctâ.*

THE QUAIL BULIMUS. Shell globosely ovate, thin, inflated, scarcely umbilicated, whorls five in number, the last very large, lip simple; brownish-white, stained with numerous large blotches of burnt-chesnut.

SOWERBY, Pro. Zool. Soc., 1832, p. 33.

Hab. Huasco, Chili (on dry stones); Cuming, D'Orbigny.

This is certainly not a variety of *B. Broderipii* as M. D'Orbigny intimates, it is, with little or no variation, of a more globose form and another style of painting.

Species 116. (Mus. Cuming.)

BULIMUS DRAPARNAUDI. *Bul. testâ subpyramidal-ovatâ, anfractibus septem convexis, labro simplici; albâ, strigis latiusculis cæruleis, roseis, et opaco-albis, lineis nigris interdum subtiliter undatis interspersis, pulcherrimè longitudinaliter pictâ.*

DRAPARNAUDS' BULIMUS. Shell somewhat pyramidally ovate, whorls seven in number, convex, lip simple;

white, very beautifully painted longitudinally with rather broad streaks of blue, pink, and opake white, interspersed with black lines which are sometimes finely waved.

PFEIFFER, Pro. Zool. Soc., 1846, p. 113.

Hab. Chilon, Bolivia (on the trunks of *Cacti*); Bridges.

This is truly a gem, exhibiting the gayest display of colours of any of the cactivorous species.

Species 117. (Mus. Cuming.)

BULIMUS BRIDGESII. *Bul. testâ ovatâ, umbilicatâ, pellucidâ, apice subobtusâ, anfractibus quatuor, striis confertissimè et subtilissimè decussatis, aperturâ parviusculâ, labro latè reflexo, ferè integro; sericeo-flavescente, peritremate albo.*

BRIDGES' BULIMUS. Shell ovate, umbilicated, pellucid, rather obtuse at the apex, whorls four in number, very closely and finely decussated with striæ, aperture rather small, lip broadly reflected, almost entire; silken yellow, peritreme white.

PFEIFFER, Pro. Zool. Soc., 1842, p. 186.

Hab. Frierina, Huasco, Chili (under stones); Bridges.

A delicate transparent shell, resembling *B. rosaceus* in form, but certainly distinct from that species. The whorls are not crenulated along the upper edge, nor is there the least tinge of rose-colouring; it has more the transparency of a silkworm cocoon.



BULIMUS.

PLATE XX.

Species 118. (Mus. Cuming.)

BULIMUS RUGIFERUS. *Bul. testá pyramidalit-turritá, umbilicatá, anfractibus octo, transversim tenuissimè striatis, longitudinaliter peculiariter rugatis, aperturá parvâ, labro simplici; intus extusque fictili-brunneâ.*

THE WRINKLED BULIMUS. Shell pyramidally turreted, umbilicated, whorls eight in number, transversely very finely striated, longitudinally peculiarly wrinkled, aperture small, lip simple; earthy brown within and without.

SOWERBY, Pro. Zool. Soc., 1833, p. 36.

Hab. Jacob Island, Gallapagos; Cuming.

Curiously longitudinally wrinkled, whilst the interstices are finely transversely striated.

Species 119. (Mus. Cuming.)

BULIMUS LAURENTII. *Bul. testá acuminato-ovatá, subampliter umbilicatá, anfractibus quinque, subrotundis, lævibus, aperturá suborbiculari, labro simplici; albidâ, rubido-fusco concinnè fasciatâ.*

THE ST. LAWRENCE BULIMUS. Shell acuminate ovate, rather largely umbilicated, whorls five in number, rather rounded, smooth, aperture somewhat orbicular, lip simple; whitish, prettily banded with reddish brown.

SOWERBY, Pro. Zool. Soc., 1833, p. 37.

Hab. Island of San Lorenzo, Bay of Callao, Peru (on stones at the summits of the mountains); Cuming.

An interesting small species existing in great abundance in the localities it inhabits.

Species 120. (Mus. Cuming.)

BULIMUS PRUINOSUS. *Bul. testá oblongo-ovatá, tenui, pellucidâ, subampliter umbilicatâ, anfractibus quinque, lævigatis, apice subpapillari, labro simplici; corneo-albicante, opaco-albo variâ.*

THE SNOWY BULIMUS. Shell oblong-ovate, thin, pellucid, rather largely umbilicated, whorls five in number, smooth, apex somewhat papillary, lip simple; horny white, variegated with opake white.

SOWERBY, Pro. Zool. Soc., 1833, p. 36.

Hab. Peru; Cuming.

A light transparent horny shell, delicately variegated with irregular opake white spots and streaks.

Species 121. (Mus. Cuming.)

BULIMUS ESCHARIFERUS. *Bul. testá subelongato-turritâ, umbilicatâ, spiræ suturis impressis, anfractibus septem, depresso-convexis, undique subtiliter seriatim granulatis, aperturâ subquadrato-ovali, labro vix reflexo; ustulato-fuscâ, fasciis angustis rufo-fuscis medio cingulatâ.*

THE TOASTED BULIMUS. Shell somewhat elongately turreted, umbilicated, sutures of the spire impressed, whorls seven in number, depressly convex, finely granulated throughout in rows, aperture somewhat squarely ovate, lip scarcely reflected; scorched-brown, encircled round the middle with two narrow red-brown bands.

SOWERBY, Conch. Illus. *Bul.* f. 87.

Hab. Chatham Island, Gallapagos; Darwin.

The granulations of this species are somewhat different from those of the *B. Proteus*; they are more isolated and more distinctly set in transverse rows.

Species 122. (Mus. Cuming.)

BULIMUS RIVASII. *Bul. testá acuminato-oblongâ, tenui, anfractibus octo, convexis, aperturâ parviusculâ, labro simplici; opaco-albâ, strigis lineolisque longitudinalibus corneis pellucidis.*

RIVAS' BULIMUS. Shell acuminate oblong, thin, whorls eight in number, convex, aperture rather small, lip simple; opake-white, with longitudinal transparent horny streaks and lines.

D'ORBIGNY, Voyage dans l'Amér. Mérid. p. 276. pl. 34. f. 8 to 10.

Hab. near Chilon, Bolivia (under dead trunks of *Cacti*); Bridges.

I have not much doubt that this shell is the *B. Rivasii* of D'Orbigny, but it is proper to mention that I have no other authority for it than that obtained by a comparison with the description and figure.

Species 123. (Mus. Cuming.)

BULIMUS RUGULOSUS. *Bul. testá cylindraneo-elongatâ, sub-Pupiformi, umbilicatâ, apice subpapillari, anfractibus octo, leviter concentricè rugulosis, columellâ supra umbilicum reflexâ, aperturâ parvâ, labro vix dilatato; olivaceo-fuscâ, fasciâ unicâ pallidâ medio cingulatâ.*

THE SLIGHTLY WRINKLED BULIMUS. Shell cylindrically elongated, somewhat Pupa-shaped, umbilicated, apex subpapillary, whorls eight in number, slightly concentrically wrinkled, columella reflected over the umbilicus, aperture small, lip very slightly dilated; olive-brown, encircled round the middle with a single pale band.

SOWERBY, Conch. Illus. *Bul.* f. 85.

Hab. Gallapagos Islands; Cuming.

Of a peculiar red-tinged olive brown-colour and chrysalis-like form.

Species 124. (Mus. Cuming.)

BULIMUS TURRITUS. *Bul. testā elongato-turritā, imperforatā, spiræ suturis impressis, anfractibus decem ad undecem, lævibus, subdepresso-convexis, aperturā parvā, labro simplici; albidā, rufo-fuscescente trifasciatā.*

THE TURRETED BULIMUS. Shell elongately turreted, imperforated, sutures of the spire impressed, whorls ten to eleven in number, smooth, depressly convex, aperture small, lip simple; whitish, encircled with four reddish-brown bands.

BRODERIP, Pro. Zool. Soc., 1832, p. 106.

Hab. Truxillo, Peru (on the mountains); Cuming.

The uppermost of the bands is next the suture of each whorl, the lowest is only shown in the last whorl.

Species 125. (Mus. Cuming.)

BULIMUS SCULPTURATUS. *Bul. testā ovatā, tenuiculā, vix umbilicatā, anfractibus septem, subventricosis, conspicuè reticulatim rugatis, interstitiis transversim corrugato-striatis, columellā simplicè reflexā, labro tenui; intus extusque fictili.*

THE SCULPTURED BULIMUS. Shell ovate, rather thin, scarcely umbilicated, whorls seven in number, somewhat ventricose, conspicuously reticulately wrinkled, the interstices being corrugately striated, columella simply reflected, lip thin; earthy brown within and without.

PFEIFFER, Pro. Zool. Soc., 1846, p. 29.

Hab. Gallapagos Islands (on bushes); Darwin.

The sculpture of this species is precisely that already described in the *B. rugiferus* and *Darwinii*, from both of which it differs in form, and from the latter more especially by the absence of any callous tubercles in the aperture.

Species 126. (Mus. Cuming.)

BULIMUS CALVUS. *Bul. testā oblongā, subturritā, umbilicatā, anfractibus septem rotundatis, lævibus aut minutè concentricè striatis, aperturā parvā, labro vix dilatato; pallescente brunneā, ad apicem nigricante.*

THE BALD BULIMUS. Shell oblong, somewhat turreted, umbilicated, whorls seven in number, rounded, smooth or minutely concentrically striated, aperture small, lip slightly dilated; pale brown, blackish at the apex.

SOWERBY, Pro. Zool. Soc., 1833, p. 72.

Hab. James' Island, Gallapagos (on dried tufts of grass); Cuming.

A smooth pale brown shell having somewhat an *Achatinella*-like appearance.

Species 127. (Mus. Cuming.)

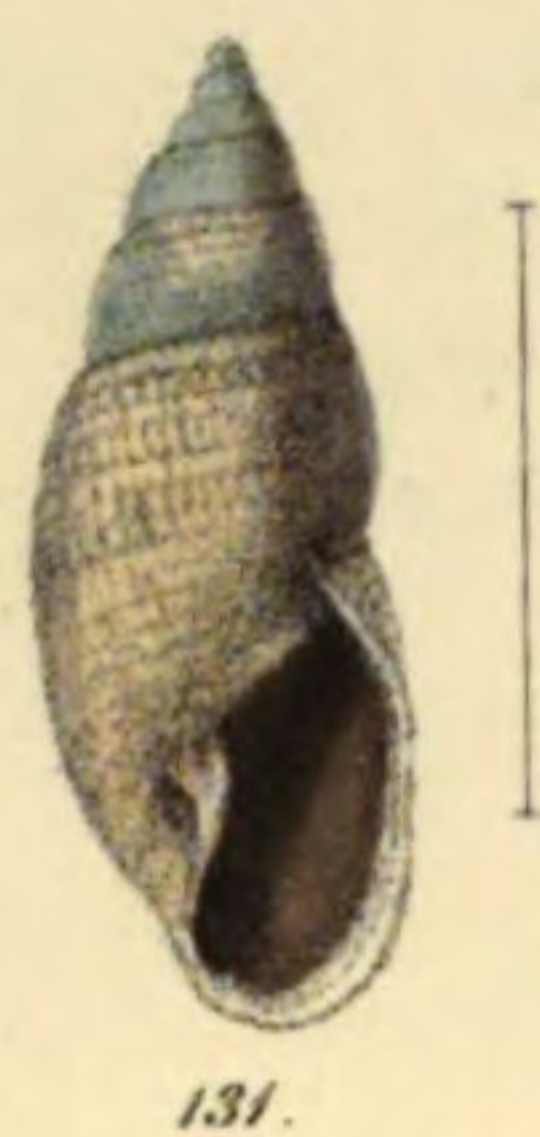
BULIMUS PUSTULOSUS. *Bul. testā subfusiformi-ovatā, ampliter umbilicatā, anfractibus sex, subrugosis, striis rudibus granulatis, moniliformibus, longitudinaliter exsculptis, columellā supra umbilicum reflexā, labro simplici; intus extusque sordidè albā.*

THE PUSTULOSE BULIMUS. Shell somewhat fusiformly ovate, largely umbilicated, whorls six in number, rather rough, longitudinally engraved with rude granulated necklace-like striæ, columella reflected over the umbilicus, lip simple; dead white within and without.

BRODERIP, Pro. Zool. Soc., 1832, p. 105.

Hab. Huasco, Chili (under stones on elevated ground); Cuming.

The necklace-like granulated striæ with which this species is longitudinally sculptured are extremely characteristic.



BULIMUS.

PLATE XXI.

Species 128. (Mus. Cuming.)

BULIMUS DECOLORATUS. *Bul. testā oblongo-ovatā, anfractibus quinque, medio subangulato-ventricosis, infra suturas peculiariter longitudinaliter crenulatis, labro simplici; albidā, fuscescente hic illic tenuiter strigatā, parte circa columellam castaneo-fuscā.*

THE DISCOLOURED BULIMUS. Shell oblong-ovate, whorls five in number, somewhat angularly ventricose in the middle, peculiarly longitudinally crenulated beneath the sutures, lip simple; whitish, finely streaked here and there with light brown, chesnut brown round the columella.

SOWERBY, Pro. Zool. Soc., 1833, p. 73.

Hab. Vicinity of Lima, Peru (found buried in the earth under bushes on the hills); Cuming.

The first two whorls of this shell are characterized by a very minute, shagreen appearance, discernible only with the lens, but it may be doubted whether it is of any specific value.

Species 129. (Fig. a and b. Mus. Cuming.)

BULIMUS SCALARIFORMIS. *Bul. testā pyramidal-oblongā, ampliter umbilicatā, anfractibus sex, rotundatis, creberrimè concentricè tenuicostatis, aperturā parvā, labro simplici; fuscescente, costis albidis.*

THE SCALARIA-SHAPED BULIMUS. Shell pyramidally oblong, largely umbilicated, whorls six in number, round, very closely concentrically finely ribbed, aperture small, lip simple; light brown, ribs whitish.

BRODERIP, Pro. Zool. Soc., 1832, p. 31.

Hab. Ancon, Peru; Cuming. Vicinity of Lima; D'Orbigny.

An extremely interesting species of which two specimens are represented, illustrative of its variation of growth. M. D'Orbigny relates having found it in great abundance among the ruins of a temple erected by the ancient Incas in honour of their invisible god, Pachacamac.

Species 130. (Mus. Cuming.)

BULIMUS USTULATUS. *Bul. testā oblongo-ovatā, subampliter umbilicatā, anfractibus sex, subrotundis, concentricè rudè striatis, labro simplici; ustulato-fuscā, spiraliter variè lineatā.*

THE SCORCHED BULIMUS. Shell oblong-ovate, rather

largely umbilicated, whorls six in number, somewhat rounded, concentrically rudely striated, lip simple; burnt brown, variously spirally lineated.

SOWERBY, Pro. Zool. Soc., 1833, p. 72.

Hab. Charles' Island, Gallapagos (under detached pieces of lava); Cuming.

The lineated pattern of this species is somewhat variable, but it is always characterized by the same scorched brown hue.

Species 131. (Mus. Cuming.)

BULIMUS MERIDIONALIS. *Bul. testā cylindraceo-ovatā, tenuiculā, vix umbilicatā, anfractibus sex, peculiariter scabroso-incisis, prope suturas irregulariter lineari-sulcatis, columellā angulariter contortā, aperturā oblongā, leviter compressā; sordidè albā, aperturæ fauce intensè purpureo-rufā.*

Voithianus (Peiffer)

THE SOUTHERN BULIMUS. Shell cylindrically ovate, rather thin, scarcely umbilicated, whorls six in number, peculiarly scabrously engraved, irregularly linearly grooved near the sutures; columella angularly twisted, aperture oblong, slightly compressed; dead white, interior of the aperture rich purple red.

Hab. Chili; Bridges.

A very singular species, which appears to have escaped the vigilant search of both Cuming and D'Orbigny. It is very unlike any other Chilean species. Of a cylindrically oblong form, its dead white surface is curiously engraved with obtuse or obsolete scales, and the interior is stained with a deep purple-red colour. The columella has a curious angular prominence, which does not, however, form an inner fold as in the Auricula-like species.

Species 132. (Mus. Cuming.)

BULIMUS BILINEATUS. *Bul. testā pyramidal-oblongā, umbilicatā, anfractibus septem, convexis, lævibus, aperturā parvā, labro simplici; fuscescente-albā, lineis duabus rufescentibus cingulatā.*

THE TWO-LINED BULIMUS. Shell pyramidally oblong, umbilicated, whorls seven in number, convex, smooth, aperture small, lip simple; brownish-white, encircled by two reddish lines.

SOWERBY, Pro. Zool. Soc., 1833, p. 37.

Hab. St. Elena and Isle of Plata, West Columbia (under stones, and buried at the roots of bushes); Cuming.
Extremely simple in form and colouring.

Species 133. (Mus. Cuming.)

BULIMUS UNICOLOR. *Bul. testā oblongā, subpyramidalī, umbilicatā, anfractibus sex, subrotundis, concentricè minutissimè rudè striatis, labro simplici; corneā, pellucidā.*

THE UNICOLOURED BULIMUS. Shell oblong, somewhat pyramidal, umbilicated, whorls six in number, somewhat rounded, concentrically very minutely rudely striated, lip simple; horny, transparent.

SOWERBY, Pro. Zool. Soc., 1833, p. 73.

Hab. Island of Perico, Bay of Panama (on dead leaves); Cuming.

Very similar in form and general character to the *B. translucens* and *Panamensis*, and found in nearly the same locality.

Species 134. (Mus. Cuming.)

BULIMUS CORNEUS. *Bul. testā ovatā, subcentricosā, umbilicatā, anfractibus quinque ad sex, rotundatis, lævibus, aut minutissimè striatis, labro simplici; corneā, pellucidā.*

THE HORNY BULIMUS. Shell ovate, somewhat ventricose, umbilicated, whorls five to six in number, rounded, smooth or very minutely striated, lip simple; horny, transparent.

SOWERBY, Pro. Zool. Soc., 1833, p. 37.

Hab. Real Llejos, Central America (under decayed grass); Cuming.

A simple transparent horny shell, the whorls being somewhat rounded.

Species 135. (Mus. Cuming.)

BULIMUS JACOBI. *Bul. testā ovatā, subacuminatā, ampliter umbilicatā, anfractibus subrotundis, lævibus, columellā supra umbilicum partim expansā, aperturā parviusculā, labro simplici; corneo-fuscescente.*

THE JACOB BULIMUS. Shell ovate, somewhat acuminate, largely umbilicated, whorls rather rounded, smooth, columella partially expanded over the umbilicus, aperture rather small, lip simple; pale horny brown.

SOWERBY, Pro. Zool. Soc., 1833, p. 74.

Hab. Jacob Island, Gallapagos; Cuming.

Chiefly distinguished from the last species by its large umbilicus, which is not seen in the figure on account of its being partially overlaid by the columellar lip.

Species 136. (Mus. Cuming.)

BULIMUS DARWINII. *Bul. testā subgloboso-ovatā, tenuiculā, inflatā, umbilicatā, anfractibus sex, supernè subangulatis, longitudinaliter conspicuè rugatis, interstitiis corrugato-striatis, columellā subtortā, tuberculis duobus callosis prominentibus armatā, aperturā subquadrato-ovali, labro simplici; intus extusque fictili-brunneā.*

DARWIN'S BULIMUS. Shell somewhat globosely ovate, rather thin, inflated, umbilicated, whorls six in number, slightly angulated round the upper part, longitudinally conspicuously wrinkled, the interstices being transversely corrugately striated, columella slightly twisted, and armed with two prominent callous tubercles, aperture somewhat squarely oval, lip simple, earthy brown within and without.

PFEIFFER, Pro. Zool. Soc., 1846, p. 29.

Hab. Gallapagos Islands (on bushes); Darwin.

It will be observed on comparing this shell with the *B. rugiferus* and *sculpturatus*, that a uniform peculiarity of wrinkled sculpture prevails in each species; the present is chiefly distinguished by its globose form and by the callosities on the columella.



138. a.



137.



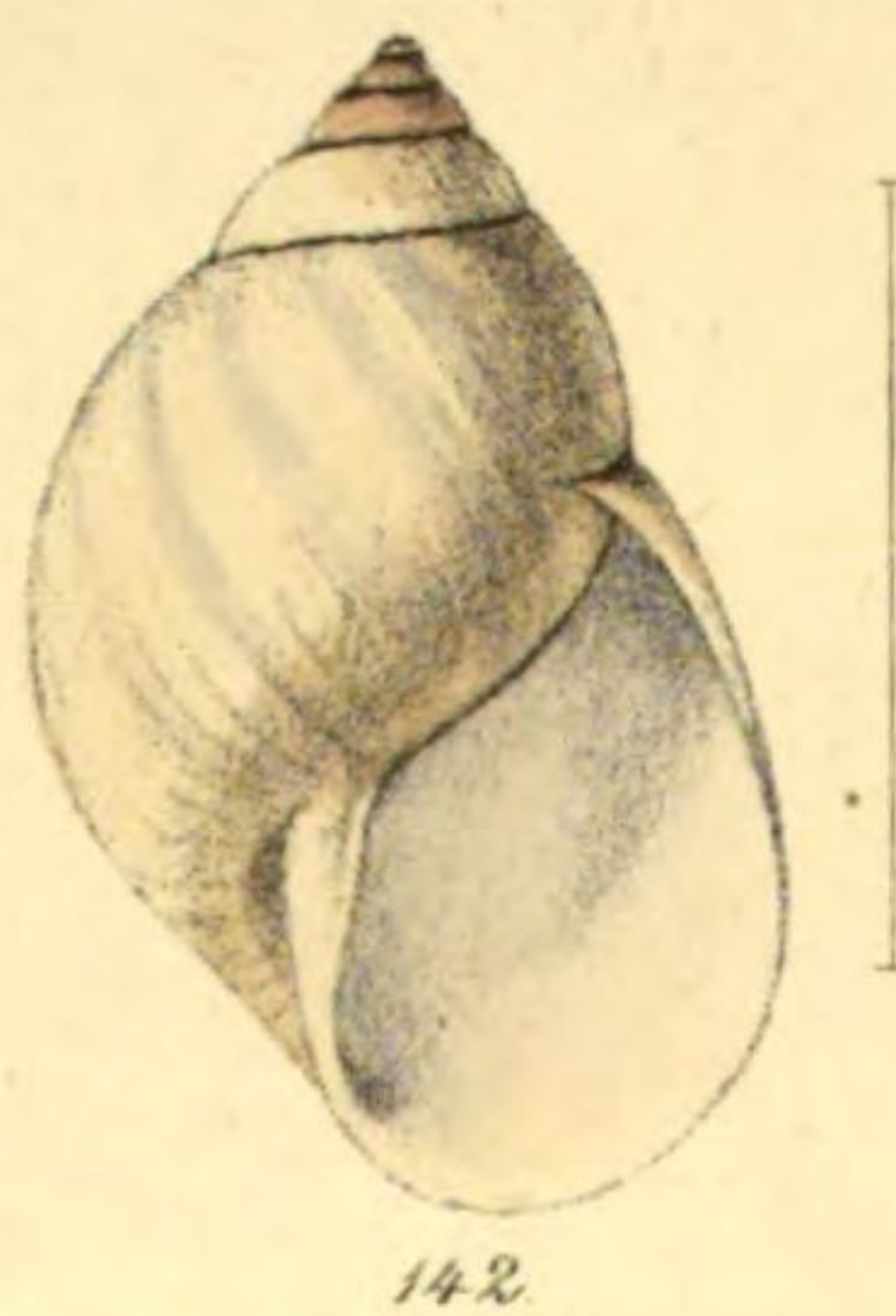
138. b.



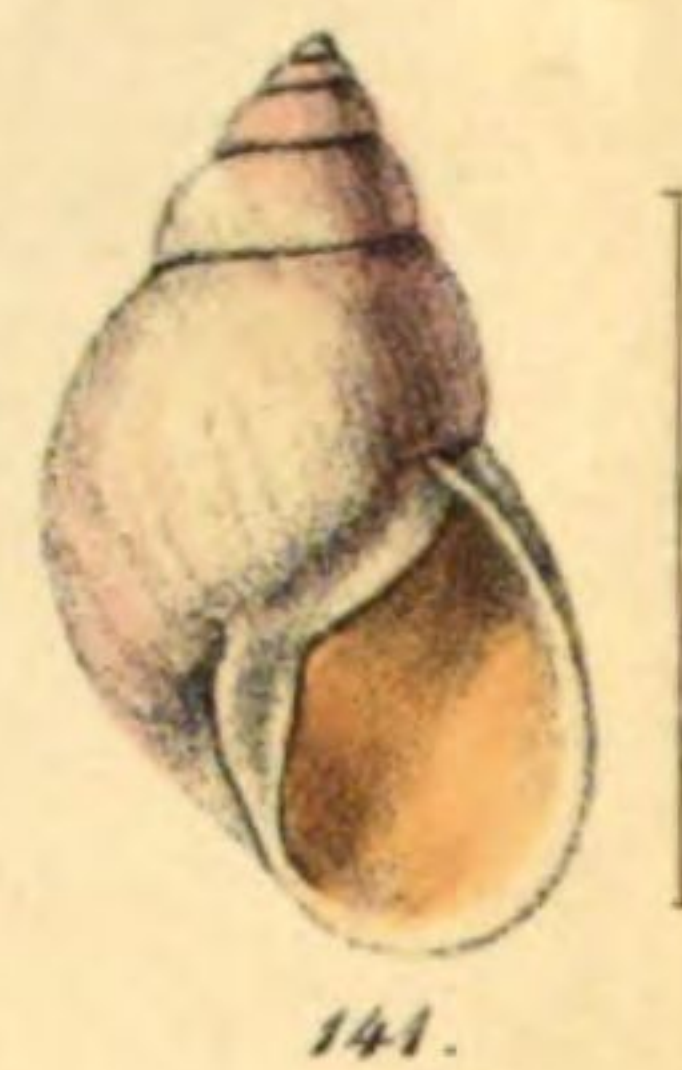
139.



140.



142.



141.



143. a.



144.



143. b.

BULIMUS.

PLATE XXII.

Species 137. (Mus. Cuming.)

BULIMUS CONSPERSUS. *Bul. testá ovatá, tenui, semi-pellucidá, subumbilicatá, anfractibus quinque, rotundatis, concentricè obsoletè rudè striatis, ad suturas crenulatis, labro simplici; flavicante-corneá, lineis guttulisque opaco-albis profusè conspersá, peritremate pallidè rosaceo.*

THE BESPRINKLED BULIMUS. Shell ovate, thin, semi-transparent, slightly umbilicated, whorls five in number, rounded, concentrically obsoletely rudely striated, crenulated at the sutures, lip simple; yellowish horny colour, profusely sprinkled with opaque white lines and dots, peritreme tinged with pink.

SOWERBY, Pro. Zool. Soc., 1833, p. 73.

Hab. Lima (buried in the earth under bushes on the hills); Cuming.

A beautifully delicate horny species, crowded with effective opaque-white lines and dots, with a pale rose peritreme to the aperture.

Species 138. (Mus. Cuming.)

BULIMUS AQUILUS. *Bul. testá ovatá, ventricosá, umbilicatá, anfractibus quinque, longitudinaliter creberrimè et subtiliter striatis, interstitiis reticulato-punctatis, labro simplici; pellucido-castaneo alboque longitudinaliter undatá et variegatá.*

THE SWARTHY BULIMUS. Shell ovate, ventricose, umbilicated, whorls five in number, longitudinally very closely and finely striated, the interstices being reticulately punctured, lip simple; longitudinally waved and variegated with transparent chesnut and white,

Hab. Tacna, Peru.

A prettily marked species approaching somewhat in character to the *B. versicolor*, but differing materially in form.

Species 139. (Mus. Cuming.)

BULIMUS STRIATUS. *Bul. testá subpyramidali-ovatá, tenuiculá, subampliter umbilicatá, anfractibus sex, undiquè concentricè elevato-striatis, columellá sublatè expansá, labro simplici; fuscescente-albá, lineis strigisve concentricis castaneis irregulariter notatá.*

THE STRIATED BULIMUS. Shell somewhat pyramidally ovate, rather thin, somewhat largely umbilicated, whorls six in number, concentrically elevately striated throughout, columella rather widely expanded, lip simple; brownish white, irregularly marked with concentric chesnut-brown lines and streaks.

KING, Zool. Journal.

Hab. Lima (upon the hills); Cuming.

Peculiarly barred here and there in the most irregular manner with dark chesnut brown.

Species 140. (Mus. Cuming.)

BULIMUS EROSUS. *Bul. testá ovatá, subampliter umbilicatá, spirá breviusculá, acuminatá, anfractibus sex, ventricosis, longitudinaliter subrugoso-striatis; diaphano fuscescente, strigis maculisque opaco-albis aspersá, apice pallidè rosaceo.*

THE ERODED BULIMUS. Shell ovate, somewhat largely umbilicated, spire rather short, acuminate, whorls six in number, ventricose, longitudinally somewhat roughly striated; light diaphanous brown, sprinkled with opaque white streaks and spots, apex pale pink.

BRODERIP, Pro. Zool. Soc., 1832, p. 106.

Hab. Huantajaya, near Iquique, Peru (under stones on the hills, 2,500 feet above the level of the sea); Cuming.

The detail of character is not much unlike that of *B. conspersus*, but it is a shell of larger size and much more solid growth.

Species 141. (Mus. Cuming.)

BULIMUS ALBICANS. *Bul. testá ovatá, umbilicatá, anfractibus quinque, ventricosis, subrugoso-striatis, columellá subexpansá, opaco-albicante, hic illic diaphaná, aperturæ fauce fulvescente.*

THE WHITE BULIMUS. Shell ovate, umbilicated, whorls five in number, ventricose, somewhat roughly striated, columella rather expanded; opaque-white, here and there diaphanous, interior of the aperture fulvous.

BRODERIP, Pro. Zool. Soc., 1832, p. 105.

Hab. Copiapo, Chili (in the dry sand on elevated ground near the Port); Cuming.

This species partakes in great measure of the characters

of *B. conspersus* and *erosus*, but is, I believe, sufficiently distinct.

Species 142. (Mus. Cuming.)

BULIMUS APODEMETES. *Bul. testā ovatā, tenui, inflatā, vix umbilicatā, anfractibus quinque, subrugoso-striatis, ultimo valdē maximo, aperturā subamplā, labro tenui; albidā.*

THE EXILE BULIMUS. Shell ovate, thin, inflated, scarcely umbilicated, whorls five in number, rather roughly striated, last whorl very much the largest, aperture somewhat large, lip thin; whitish.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 279.

Hab. Bolivia, &c.; D'Orbigny.

I must refer the reader for a better illustration of this species to the above-mentioned magnificent work by M. D'Orbigny, the present uncoloured specimen giving no other idea of it than that of form. In reference to colour M. D'Orbigny says, "the tints are extremely variable according to the localities; at Parana the shell is pale-yellow or dotted, often marked with transverse lines of marbled white and clear brown, with indications of distant clear brown longitudinal lines; at Chiquitos, on the other hand, it is distinguished by longitudinal brown bands only, which are then more conspicuous."

Species 143. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS STRIATULUS. *Bul. testā pyramidalī-ovatā, tenui, diaphanā, conspicuē umbilicatā, anfractibus rotundatis, pulcherrimē creberrimē concentricē elevato-striatis, columellā reflexā, labro simplici; pallidē corneā, translucidā, striis opaco-albis, fasciis plurimis albidis interruptis cingulatā.*

Philippin
(Pfeiffer)

THE FINELY STRIATED BULIMUS. Shell pyramidally ovate, thin, diaphanous, conspicuously umbilicated, whorls rounded, very beautifully closely concentrically elevately striated, columella reflected, lip simple; pale horny colour, transparent, the striæ opake-white, encircled with numerous interrupted whitish bands.

SOWERBY, Pro. Zool. Soc., 1833, p. 73.

Bulimus D'Orbignii, Pfeiffer,

Hab. Lima (under stones on the hills); Cuming.

A beautiful species, distinguished by the delicate aspect of its fine opake-white striæ upon a transparent horny ground.

Fig. *a* is a representation of the specimen upon which Mr. Sowerby founded the species, and Fig. *b* is the shell described by Dr. Pfeiffer under the name *B. D'Orbignii*.

Species 144. (Mus. Cuming.)

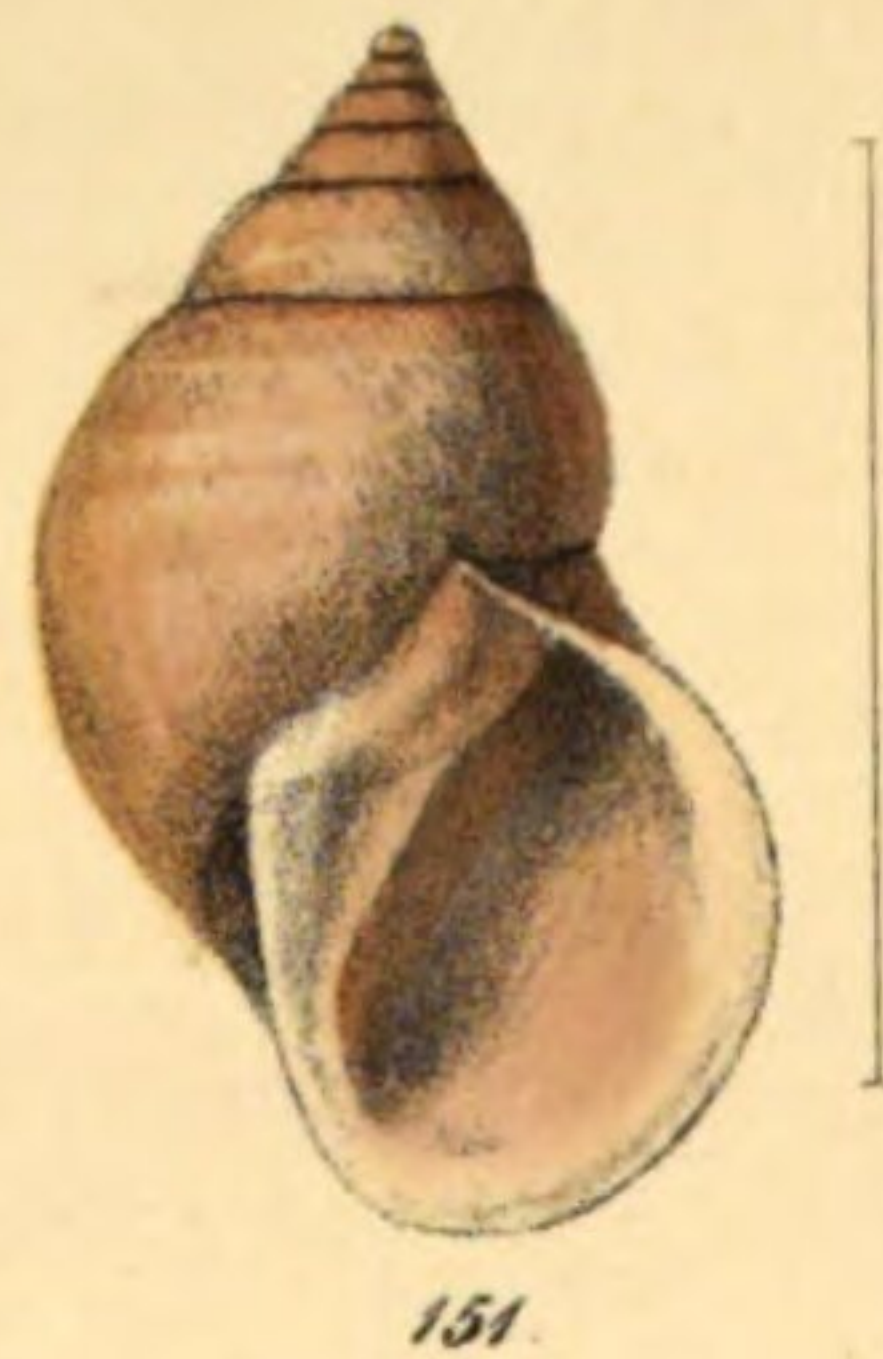
BULIMUS GUTTATUS. *Bul. testā pyramidalī-oblongā, subfusiformi, umbilicatā, apice papillari, anfractibus sex, longitudinaliter rugoso-striatis, ad suturas crenulatis; fulvo-fuscescente, guttis apaco-albis longitudinaliter notatā, apice rosaceo-fuscā.*

THE MOTTLED BULIMUS. Shell pyramidally-oblong, somewhat fusiform, umbilicated, apex papillary, whorls six in number, longitudinally rugosely striated, crenulated at the sutures; pale fulvous-brown, longitudinally marked with opake-white speckles; apex pinkish-brown.

BRODERIP, Pro. Zool. Soc., 1832, p. 31.

Hab. Cobija; Cuming.

This species like others of the plate is characterized by a sprinkling of opake-white spots, and it is distinguished by its papillary apex.



BULIMUS.

PLATE XXIII.

Species 145. (Mus. Cuming.)

BULIMUS DISCREPANS. *Bul. testā acuminato-oblongā, tenui, anfractibus sex, lævibus, aut sub lente minutissimè transversim impresso-striatis, labro simplici; lacteā, lineis fuscis subdistantibus obliquè pictā.*

THE DIFFERING BULIMUS. Shell acuminate oblong, thin, whorls six in number, smooth, or, under the lens, very minutely transversely impressly striated, lip simple; cream colour, obliquely painted with rather distant brown lines.

SOWERBY, Pro. Zool. Soc., 1833, p. 72.

Hab. Conchagua, Central America (found under the bark of a tree); Cuming.

Distinguished by its painting of delicate brown lines, which are placed, for the most part, at equal distances from each other.

Species 146. (Mus. Cuming.)

BULIMUS MONTAGNEI. *Bul. testā acuminato-oblongā, tenuiculā, vix umbilicatā, anfractibus septem, lævibus, subrotundis, labro simplici; albidā, strigis punctisque cæruleo-nigricantibus longitudinaliter pictā, aperturæ fauce lutescente.*

MONTAGNE'S BULIMUS. Shell acuminate oblong, rather thin, scarcely umbilicated, whorls seven in number, smooth, somewhat rounded, lip simple; whitish, painted longitudinally with bluish black dots and streaks, interior of the aperture yellowish.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 286. pl. 32. f. 7.

Hab. Chilon, Bolivia (under dead trunks of *Cacti*); Bridges.

I take this shell to be the *B. Montagnei* of D'Orbigny from its very accurate resemblance with his Fig. 7 of that species.

Species 147. (Mus. Cuming.)

BULIMUS HUASCENSIS. *Bul. testā acuminato-oblongā, subampliter umbilicatā, anfractibus sex, rotundatis, concentricè irregulariter rugoso-striatis, suturis subprofundis, labro simplici; cærulescente-albā.*

THE HUASCO BULIMUS. Shell acuminate oblong, rather

largely umbilicated, whorls six in number, rounded, concentrically, irregularly, roughly striated, sutures rather deep, lip simple; bluish-white.

Hab. Huasco, Chili; Bridges.

A small species collected by Mr. Bridges which is not exactly referable to any of those discovered by Mr. Cuming or M. D'Orbigny.

Species 148. (Mus. Cuming.)

BULIMUS RUBESCENS. *Bul. testā subacuminato-ovatā, umbilicatā, anfractibus sex, rotundatis, concentricè rugoso-striatis, labro simplici; albidā, lineis fuscescentibus longitudinaliter irregulariter notatā, columellā et aperturæ fauce purpureo-roseis.*

Hennahi
(Gray)

THE BLUSHING BULIMUS. Shell somewhat acuminate ovate, umbilicated, whorls six in number, rounded, concentrically roughly striated, lip simple; whitish, irregularly marked with light brown longitudinal lines, columella and interior of the aperture purple-rose.

Hab. South America.

A characteristic new species, distinguished by the delicate purple-rose bloom which lines the interior.

Species 149. (Mus. Cuming.)

BULIMUS UNIFASCIATUS. *Bul. testā subpyramidal-ovatā, tenui, cornedā, umbilicatā, anfractibus sex, longitudinaliter subtiliter striatis, labro simplici; luteo-fuscescente, fasciā angustā, unicā, stramineā medio cingulatā.*

THE ONE-BANDED BULIMUS. Shell somewhat pyramidally ovate, thin, horny, umbilicated, whorls six in number, longitudinally finely striated, lip simple; yellowish-brown, encircled round the middle by a single narrow straw-coloured band.

SOWERBY, Pro. Zool. Soc., 1833. p. 37.

Hab. Charles's Island, Gallapagos (found under detached pieces of lava); Cuming.

A semi-transparent horny shell, mainly distinguished by a narrow pale straw-coloured band by which it is encircled throughout.

June, 1848.

Species 150. (Mus. Cuming.)

BULIMUS NUX. *Bul. testā pyramidalis-ovatā, umbilicatā, anfractibus septem, concentricè rudè corrugato-striatis, aperturā subquadrato-ovatā, paululum effusā; olivaceo-fuscā, rufescente tinctā, apice nigricante, aperturæ fauce cærulescente-albā, prope marginem fuscā.*

THE NUT BULIMUS. Shell pyramidally ovate, umbilicated, whorls seven in number, concentrically rudely striated in a wrinkled manner, aperture somewhat squarely ovate, slightly effused; olive-brown, stained with rusty red, blackish at the apex, interior of the aperture bluish-white, brown near the edge.

BRODERIP, Pro. Zool. Soc., 1832, p. 125.

Hab. Charles's Island, Gallapagos (on bushes); Cuming.

The aperture of this species is frequently compressed at the sides so as to give it a somewhat square aspect.

Species 151. (Mus. Cuming.)

BULIMUS DERELICTUS. *Bul. testā acuminato-ovatā, ampliter umbilicatā, anfractibus sex, subrotundatis, subtilissimè granoso-striatis, columellā labroque expansis, apice papillari; corneo-albidā, opaco-albo hic illic conspersā.*

THE FORSAKEN BULIMUS. Shell acuminate ovate, largely umbilicated, whorls six in number, somewhat rounded, very finely granosely striated, lip and columella expanded, apex papillary; flesh-white, sprinkled here and there with opake-white.

BRODERIP, Pro. Zool. Soc., 1832, p. 107.

Hab. Cobija; Cuming.

The name attached to this shell is intended to denote the solitary habitat in which it was found by Mr. Cuming, on flat rocks without soil or verdure, all being desolate for a league around. M. D'Orbigny notices having collected it of a pinky hue, at a greater elevation upon some lichens and cactuses.

Species 152. (Mus. Cuming.)

BULIMUS VEXILLUM. *Bul. testā oblongo-ovatā, corneā, subpellucidā, anfractibus quinque, lævigatis, nitidis; luteo-albicante, fasciis plurimis castaneis cingulatā.*

THE FLAG BULIMUS. Shell oblong-ovate, horny, semi-transparent, whorls five in number, smooth, shining; yellowish-white, encircled by numerous chesnut bands.

BRODERIP, Pro. Zool. Soc., 1832, p. 105.

Hab. King's and Saboga Islands, Bay of Panama (on the trunks of large trees); Cuming.

This comparatively well-known species has, I believe, been called *B. alternatus* by Dr. Beck, in consequence of Mr. Broderip's name having been formerly applied by Bruguière to the shell commonly known as *Achatina vexillum*. M. Deshayes does not, however, think there is any necessity for this change, and lest it might add to the confusion I have avoided it.

Species 153. (Mus. Cuming.)

BULIMUS PESSULATUS. *Bul. testā ovatā, tenui, inflatā, anfractibus quinque, rotundatis, ventricosis, lævibus, labro simplici; pellucido-corneā, epidermide ferrugineo-albo opaco, castaneo longitudinaliter strigatā, strigis distantibus, conspicuis.*

THE CROSS-BARRED BULIMUS. Shell ovate, thin, inflated, whorls five in number, rounded, ventricose, smooth, lip simple; transparent horny, covered by a rusty white opake epidermis, crossed with conspicuous distant longitudinal streaks.

Hab. Santa Cruz de la Sierra, Bolivia (on bushes and high grass); Bridges.

This has much the appearance of being an immature shell, but the specimens collected by Mr. Bridges are all alike, and are without doubt of adult growth.

Species 154. (Mus. Cuming.)

BULIMUS AFFINIS. *Bul. testā elongato-ovatā, subfusiformi, umbilicatā, anfractibus septem, convexis, longitudinaliter rugoso-striatis, labro simplici; pallidè corneā, maculis strigisque undatis opaco-albis profusè notatā, apice roseā.*

THE ALLIED BULIMUS. Shell elongately ovate, somewhat fusiform, umbilicated, whorls seven in number, convex, longitudinally roughly striated, lip simple; pale horny, profusely marked with opake-white waved streaks and spots, pink at the apex.

BRODERIP, Pro. Zool. Soc., 1832, p. 105.

Hab. Mexillones, desert of Atacama, Peru (in small crevices of the dry earth at an elevation of 2,000 feet above the sea); Cuming.

A light transparent shell covered with delicate flakes of opake-white.

alternans
(Berk.)



156.



155. a.



155. b.



157.



158.



159.



160. a.

BULIMUS.

PLATE XXIV.

Species 155. (Mus. Cuming.)

BULIMUS COLORATUS. *Bul. testā ovatā, ventricosissimā, vix umbilicatā, spirā brevi, anfractibus quinque, tumido-convexis, pulcherrimè minutè promiscuè granulatis, ad suturas subtilissimè crenulatis, columellā plicā unicā ascendente, aperturā subamplā, labris laminā callosā junctis, peritremate conspicuè reflexo; albidā, flammis luteis longitudinalibus, maculis strigisve nigricantibus umbratis, epidermide olivaceā indutā, apicem versus castaneā, columellā labroque roseis.*

THE COLOURED BULIMUS. Shell ovate, very ventricose, scarcely umbilicated, spire short, whorls five in number, tumidly convex, very beautifully minutely promiscuously granulated, very finely crenulated at the sutures, columella with a single ascending fold, aperture rather large, outer and columellar lips connected by a callous lamina on the body whorl, peritreme conspicuously reflected; whitish, with longitudinal yellow flames shaded with blackish spots or streaks, covered by an olive epidermis, chesnut-coloured towards the apex, lip and columella deep rose.

NYST, Bull. de l'Acad. Royale de Bruxelles, vol. xii. 1ère partie, pl. 1. f. 2 a, b.

Hab. Province of Cumana, Colombia; Funck.

A truly interesting species collected by M. Funck, the South American traveller, in the interior of Colombia, and first described by M. Nyst in the Transactions of the Royal Academy of Brussels, from a specimen of much younger and more pellucid growth than those before me. The most characteristic features of the species are its beautifully granulated surface and richly shadowed undulated painting, whilst the lip is of a deep rose colour, and the interior lined with a delicate pinkish bloom, through which the outer pattern is discernible.

Species 156. (Mus. Cuming.)

BULIMUS LAMARCKIANUS. *Bul. testā ovatā, ventricosissimā, vix umbilicatā, spirā brevi, anfractibus quinque, subplano-convexis, minutè promiscuè obtuso-granulatis, ad suturas subtilissimè crenulatis, columellā plicā unicā ascendente, aperturā subamplā, peritremate conspicuè reflexo; pallidè livido-fuscescente, punctis grandibus castaneis hic illic piperatā, epidermide olivaceā indutā, peritremate livido-fusco.*

LAMARCK'S BULIMUS. Shell ovate, very ventricose, scarcely umbilicated, spire short, whorls five in number, rather flatly convex, minutely promiscuously obtusely granulated, very finely crenulated at the sutures, columella with a single ascending fold, aperture rather large, peritreme conspicuously reflected; pale livid brown, peppered here and there with large chesnut dots, covered with an olive-brown epidermis, peritreme livid brown.

PFEIFFER, Monog. *Bul.*

Hab. Andes of New Granada (at an elevation of about 8,000 feet); Funck.

So closely does this species approximate to the preceding, that I feel somewhat doubtful of the propriety of retaining it; they appear to differ, so far as may be judged by a comparison of the specimens here figured, but it is easy to conceive that a larger series would reveal a much closer affinity between them.

Species 157. (Mus. Dennison.)

BULIMUS PARDALIS. *Bul. testā oblongo-ovali, subventricosā, crassiusculā, anfractibus quinque, subobliquè convolutis, apicem versus minutissimè creberrimè obtuso-granulatis, per suturas undique longitudinaliter crenulatis, columellā contortā, fortiter uniplicatā, labro conspicuè reflexo; purpurascente-fuscā, longitudinaliter albiflammā, epidermide lutescente-olivaceā indutā, columellā et peritremate albis.*

THE PANTHER BULIMUS. Shell oblong-oval, rather ventricose, somewhat thick, whorls five in number, rather obliquely convoluted, very minutely and closely obtusely granulated towards the apex, longitudinally crenulated throughout along the sutures, columella twisted, with a strong winding plait, lip conspicuously reflected; purplish-brown, longitudinally flamed with white, and covered by a yellowish olive epidermis.

DE FERUSSAC, Hist. Moll. terr. et fluv. pl. 112. f. 7. 8.

Bulimus Venezuelensis, Nyst.

Bulimus atrapoides, Jonas.

Hab. Cumana, Venezuela; Funck. Varinas, Venezuela; Dyson.

It is somewhat difficult to recognise this species by the figure of M. De Férussac, it being only known to the illustrious author of the 'Histoire des Coquilles Terrestres'

June, 1848.

in a smaller state deprived of epidermis. The specimen here represented, is from the choice collection of Mr. Dennison, and Mr. Cuming possesses it almost equally fine, selected from the stores of Mr. Dyson obtained during a recent expedition to Venezuela.

The journey performed by Mr. Dyson in this fertile district of South America, in search of objects of natural history, was undertaken through the generosity of a limited number of zoological friends, who, with the hope of enriching their collections, were at the same time desirous of encouraging the zeal of a young naturalist distinguished by his love of adventure. Though not perhaps a very profitable excursion, he collected many interesting species, and has no doubt gratefully responded to the patronage of his friends.

Species 158. (Mus. Cuming.)

BULIMUS THOMPSONI. *Bul. testā subelongato-oblongā, imperforatā, apice obtusā, anfractibus sex, longitudinaliter striatis, per suturas plano-crenulatis, columellā rectā vel paululum arcuatā, labro vix reflexo; livido-cinereā, epidermide corneā, nitidā, olivaceo-viridi indutā, apice rufescente, anfractuum margine superiori crenulato albicante, aperturæ fauce cærulescente, juxta peritrema purpureo-nigricante, labris laminā nigricante-lividā callosā junctis.*

THOMPSON'S BULIMUS. Shell somewhat elongately oblong, imperforated, obtuse at the apex, whorls six in number, longitudinally striated, flatly crenulated along the sutures, columella straight or a little curved, lip but slightly reflected; livid ash colour, covered with a shining horny olive-green epidermis, reddish towards the apex, upper crenulated edge of the whorls whitish, interior of the aperture bluish, purple-black towards the peritreme, lips joined by a callous blackish livid lamina.

PFEIFFER, Pro. Zool. Soc., 1845, p. 74.

Hab. Andes of Quito.

A very distinct species remarkable for the same shining horny green epidermis which characterizes the *Helix Busbii*. (Conch. Syst. vol. ii. pl. 164. fig. 11.)

Species 159. (Mus. Cuming.)

BULIMUS SHONGI. *Bul. testā pyramidal-oblongā, crassā, imperforatā, anfractibus sex, lævibus, per suturas sub-crenulatis, labro reflexo; fusciscente, epidermide corneā rufo-castaneā indutā, anfractuum margine superiori*

albicante, columellā et aperturæ fauce intensè aurantiorufis, peritremate albicante.

SHONG'S BULIMUS. Shell pyramidally oblong, thick, imperforated, whorls six in number, smooth, slightly crenulated along the sutures, lip reflected; light brown, covered with a horny reddish chesnut epidermis, upper edge of the whorls whitish, columella and interior of the aperture deep orange red, peritreme whitish.

LESSON, Voy. de la Coquille, Moll. p. 321. pl. 7. f. 4, 5.

Hab. New Zealand.

A shell of not uncommon occurrence, always distinguished by the deep orange red colouring of the aperture and rich chesnut epidermis, whilst there is no plait on the columella.

It was first discovered by M. Lesson, during the Voyage of the Coquille, at the Bay of Islands, New Zealand, and named after one of the native Chiefs of that district. Subsequently M. Lesson thought to have recognised his species in Chemnitz's figure, Conchyl. Cab. vol. ix. pl. 121. f. 1039-40, under the title *Helix auris-Midæ* and in De Férussac's figure of the *B. auris-bovinus*, Hist. Moll. terr. et fluv. pl. 159. f. 1, 2, but it is perfectly distinct from these, which (*vide* Pl. XXX.) are also distinct from each other, and the honoured name of the New Zealand Chief remains to posterity.

Species 160. (Mus. Cuming.)

BULIMUS FULMINANS. *Bul. testā oblongā, apicem versus peculiariter acuminatā, anfractibus quinque, oblique convolutis, undique longitudinaliter et reticulatè corrugatis, columellā fortiter uniplicatā labro latè reflexo; fumeo-fuscā, subpellucidā, strigis longitudinalibus acutè angulatis intensè castaneis conspicuè ornatā.*

THE LIGHTNING BULIMUS. Shell oblong, peculiarly acuminate towards the apex, whorls five in number, obliquely convoluted, longitudinally and reticulately wrinkled throughout, columella strongly one-plaited, lip widely reflected; smoky brown, somewhat transparent, conspicuously ornamented with sharply angled, dark chesnut longitudinal streaks.

NYST, Bull. de l'Acad. Royale de Bruxelles.

Bulimus bellulus, Jonas.

Bulimus Loeveni, Pfeiffer.

Hab. Colonia de Tovar, Venezuela; Dyson.

A somewhat rare species rather sharply acuminate towards the apex, of a peculiar semitransparent smoky brown colour, marked with sharply zigzag longitudinal chesnut streaks.

103



161. b.



161. a.



161. c.



162. a.



162. b.



163.



164.

BULIMUS.

PLATE XXV.

Species 161. (Fig. *a* and *b*. Mus. Cuming.)

BULIMUS BLAINVILLEANUS. *Bul. testâ ovatâ, spirâ brevissimâ, anfractibus quinque, inflatis, suboblique convolutis, undique pulcherrimè longitudinaliter et reticulatè corrugatis, columellâ fortiter uniplicatâ, labro latè reflexo; fumeo-fuscâ, strigis castaneis acutè angulatis longitudinaliter pictâ, epidermide subtilissimè corrugatâ viridi luteo-punctulatâ indutâ.*

DE BLAINVILLE'S BULIMUS. Shell ovate, spire very short, whorls five in number, inflated, somewhat obliquely convoluted, very beautifully longitudinally and reticulately wrinkled throughout, columella strongly one-plaited, lip widely reflected; smoky-brown, longitudinally painted with sharply zigzag chesnut streaks, covered with a very finely wrinkled epidermis, of a green colour sometimes dotted with yellow.

PFEIFFER, Monog. *Bul.*

Hab. Zaji, Province of Merida, New Granada; Funck, Linden.

This very beautiful species has precisely the sculpture, colour, and marking of the *B. fulminans*, overlaid by a remarkable epidermis of a dark green colour, sometimes minutely yellow-dotted, deposited in fine wrinkles resembling those which may frequently be observed on oil-painting that has been exposed to the heat of the sun. It differs in form, being shorter and of a more inflated growth, but is a curious approximation to it in other respects.

Species 162. (Mus. Cuming.)

BULIMUS MORITZIANUS. *Bul. testâ oblongo-ovatâ, ventricosâ, anfractibus sex, convexis, lævibus, ad suturas exiliter crenulatis, columellâ fortiter uniplicatâ, labro reflexo; fuscâ, lutescente-albo sæpè longitudinaliter undato-strigatâ, epidermide olivaceo-viridi, nunc lævigatâ, nunc corrugatâ, indutâ, columellâ labroque interdum vividè rufo-aurantiâ, interdum fumeo-fuscâ.*

MORITZ'S BULIMUS. Shell oblong-ovate, ventricose, whorls six in number, convex, smooth, faintly crenulated at the sutures, columella strongly one-plaited, lip reflected; brown, often longitudinally streaked with yellowish white in zigzag pattern,

covered with an olive green epidermis, sometimes smooth, sometimes wrinkled, lip and columella bright reddish-orange or smoky brown.

PFEIFFER, Monog. *Bul.*

Hab. Chachopo, Province of Merida, New Granada (in the woods); Funck, Linden.

A fine new species of which Mr. Cuming possesses several examples varying in colour and painting between those selected for illustration. The rich dark green epidermis and deep orange lip and columella present an effective contrast.

Species 163. (Mus. Cuming.)

BULIMUS CALEDONICUS. *Bul. testâ subfusiformi-oblongâ, crassissimâ, anfractibus sex, subdepressis, lævibus, columellâ valdè incrassatâ, medio depressâ, deinde productâ et tumidâ, parte superiori tuberculo calloso munitâ, aperturâ auriculatâ, contractâ, labro incrassato, non reflexo, supernè late sinuato; fuscescente-albâ, epidermide castaneâ nitidâ indutâ, columellâ labroque albidis, aperturæ fauce intensè sanguineo-rufâ.*

THE NEW CALEDONIA BULIMUS. Shell somewhat fusiformly oblong, very thick, whorls six in number, rather depressed, smooth, columella very much thickened, depressed in the middle, then produced and swollen, upper part furnished with a callous tubercle, aperture auriculated, contracted, lip thickened, not reflected, broadly sinuated above; brownish-white, covered with a shining chesnut epidermis, lip and columella whitish, interior deep blood red.

PETIT, Magasin de Zoologie.

Hab. New Caledonia.

A remarkable species, chiefly distinguished by the curious auriculated structure of the aperture; there is no plait on the columella, but a prominent callous wart or tubercle. The lip is not reflected but pressed over the aperture, and towards the upper part is characterized by a deep sinus. Were this singularity of growth not proved to be constant in the species, it might have been regarded as an unnatural distortion. We are indebted to M. Petit, a zealous conchologist of Paris, for having described this species, and I have to thank him for sending me a specimen which accords in all respects with those in Mr. Cuming's collection.

June, 1848.

Species 164. (Mus. Cuming.)

BULIMUS AURIS-SILENI. *Bul. testā ovato-oblongā, apicem versus abbreviato-tumidā, anfractibus quatuor, corrugato-striatis, subrotundatis, obliquè convolutis, columellā fortissimè uniplicatā, plicā valdè productā, labro latè reflexo; fulvā, strigis nigricante-viridibus longitudinaliter undatā, epidermide luteo-olivaceā indutā, columellā labroque albis.*

THE SILENUS' EAR BULIMUS. Shell ovately oblong, abbreviately swollen towards the apex, whorls four in number, striated in a wrinkled manner, somewhat rounded, obliquely convoluted, columella very strongly plaited, extremely produced, lip widely reflected; fulvous, longitudinally waved with blackish green stripes, and covered with a yellowish-olive epidermis, lip and columella white.

BRUGUIERE, Enc. Méth. vol. i. p. 345.

Auris Sileni, Born.*Helix Auris-Sileni*, De Férussac.*Auricula caprella*, Lamarck.*Carychium undulatum*, Leach.*Plekocheilus undulatus*, Guilding.

Hab. — ?

This is without doubt the original *Auris Sileni* of the Vienna Museum, of which a characteristic representation is given by Born and Chemnitz, and not the shell described by Lamarck under the name *Auricula Sileni*. It is a short thick shell of tumid growth, distinguished by a remarkably prominent plait on the columella and bold oval aperture with rudely reflected lip.



165. a.



166. a.



166. b.



165. b.

BULIMUS.

PLATE XXVI.

Species 165. (Mus. White.)

BULIMUS ADAMSONI. *Bul. testâ subfusiformi-ovatâ, ventricosâ, spirâ acuminatâ, pyramidalî, anfractibus sex ad septem, lævibus vel obliquè tenuistriatis; columellâ subrectâ, aperturâ paululum effusâ, labro vix reflexo; violaceo-cinereâ, basin versus subolivaceâ, fusco hic illic sparsim nebulatâ, vittâ conspicuâ cærulescente-albâ, olivaceo-nigricante subremotè articulatâ cingulatâ; vittâ alterâ pallidâ obscurâ supra, columellâ purpureo-nigricante, peritremate violaceo, intus cærulescente-albo.*

ADAMSON'S BULIMUS. Shell somewhat fusiformly ovate, ventricose, spire acuminated, pyramidal, whorls six to seven in number, smooth or obliquely finely striated; columella nearly straight, aperture a little effused, lip scarcely reflected; violet ash colour, olive-tinted towards the base, sparingly clouded here and there with brown; encircled by a conspicuous blue-white fillet, rather remotely articulated with olive-black, there being another pale obscure fillet above, columella purple-black, peritreme violet, bluish white within.

Hab. Base of the Purremo, near the volcano of Tolyma, on the eastern slope of the Andes.

This magnificent species was purchased many years since, with the above locality, by John Adamson, Esq., of Newcastle-on-Tyne, and no other specimen has since been heard of. The collection of that gentleman having been recently dispersed, it has fallen into the possession of another eminent amateur conchologist, Henry Hopley White, Esq., through whose kindness and liberality I am enabled to publish it after a long period of obscurity.

It is of an elegant pyramidally fusiform growth, rather ventricose and a little effused towards the base, of a rich olivaceous violet colour, distinguished by a conspicuous white belt remotely articulated with purple-black, and the peritreme of the aperture is of a rich violet.

Species 166. (Mus. Dennison.)

BULIMUS DENNISONI. *Bul. testâ acuminato-ovatâ, ventricosâ, anfractibus quinque ad sex, supernè subconcavo-depressâ, superficie striis rugosis undique subtilissimè*

decussatâ, anfractu ultimo peramplo, inflato, columellâ subrectâ, aperturâ oblongâ, labro vix reflexo; supra cæruleo-albicante, nigricante-viridi variegatâ et punctatâ, infra luteo-olivaceâ, punctis strigisque brevibus undatis nigricante-viridibus, luteo in uno latere illuminatis, pulcherrimè pictâ, zonis albidis cingulatâ, quarum inferiori subobscurâ, peritremate fusco, intus cæruleo-albicante.

DENNISON'S BULIMUS. Shell acuminately ovate, ventricose, whorls five to six in number, slightly concavely depressed round the upper part, the entire surface being very finely decussated with rough striæ, reticulated, last whorl very large, inflated; columella nearly straight, aperture oblong, lip scarcely reflected; bluish white above, variegated and dotted with blackish green, beneath yellowish olive, very beautifully painted with dots and short-waved streaks of blackish green, illuminated along one side with yellow, and encircled by two whitish zones of which the lower is somewhat obscure, peritreme brown, interior bluish white.

Hab. — ?

Another fine species, from probably the same fertile region, of which, I believe, only two specimens are known; one, here figured, in the collection of J. Dennison, Esq.; the other, very much worn and discoloured, in the British Museum. It approximates closely to the preceding species in general appearance, but differs materially in its details. In the *B. Adamsoni* the whorls form a nearly straight pyramidal cone, in the *B. Dennisoni* they are more ventricose and less pyramidally disposed, whilst the last is proportionably larger, more oblong, and more inflated. The texture of the two shells is dissimilar; the former is smooth or obliquely striated and appears to have a thin horny stratum of semi-transparent epidermis, the latter is finely decussated with rough uneven striæ in a manner which is rarely if ever observed beneath a horny epidermis. The difference of colouring is best described in the accompanying drawings; they are two elegantly painted shells and, as species quite unapproached by any hitherto described, constitute a most interesting and valuable addition to the genus.

July, 1848.



167. b.



167. a.



167. c.



168. b.



168. a.



168. c.



90. b.

BULIMUS.

PLATE XXVII.

Species 167. (Fig. 167 a, Mus. Dennison. Fig. 167 b, Mus. Cuming.)

BULIMUS POWISIANUS. *Bul. testā acuminato-oblongā, crassā, apice obtusā, anfractibus lævibus, nitidis, vix striatis; columellā subarcuatā, aperturā parviusculā, paululum effusā, labro incrassato, vix reflexo; fulvescente-spadiceā, strigis irregularibus obliquis, nigricante-viridibus, cingulo unico in anfractu ultimo, conspicuè pictā, interdum immaculatā, cingulo tantum, columellā labroque intensè purpureo-violaceis, peritremate nigricante, apice rufo-castaneo.*

POWIS' BULIMUS. Shell acuminate oblong, thick, obtuse at the apex, whorls smooth, shining, scarcely striated, columella slightly arched, aperture rather small, a little effused, lip thickened, but slightly reflected; fulvous bay, conspicuously painted with irregular, oblique, blackish-green streaks, and a single belt round the last whorl, sometimes unspotted, with the belt only, lip, and columella deep purple violet, peritreme blackish, apex reddish chesnut.

PETIT, Magasin de Zool.

Hab. Valle de Cauca, New Granada

This very beautiful and rare species approximates in a manner to the *B. regina* which follows; it is of a less acuminate form, of extremely solid structure, and, excepting the lip and columella, the pattern of colouring is dissimilar. Of the specimens here represented, that from the collection of Mr. Dennison is distinguished by its rich painting of irregular black-green stripes upon a fulvous-bay ground; in Mr. Cuming's specimen the ground colour is unspotted, but in both examples the last whorl is encircled by a characteristic narrow belt of the same dark colour as the stripes.

Species 168. (Fig. a, b, c. Mus. Cuming.)

BULIMUS REGINA. *Bul. testā subelongato-oblongā, sæpè sinistrali, spirā pyramidal-acuminatā, apice obtusā; anfractibus septem ad octo, lævibus vel obliquè tenuistriatis, columellā subcontortā, labro simplici; fulvescente-albā, anfractibus supernè fusco viridique variegatis et articulatis, infernè rufescentibus aut purpureo-nigricantibus, columellā et aperturæ fauce interdum albis, interdum intensè violaceis, nigro marginatis.*

THE QUEEN BULIMUS. Shell somewhat elongately oblong, often sinistral, spire pyramidally acuminate, obtuse at the apex; whorls seven to eight in number, smooth or obliquely finely striated, columella slightly twisted, lip simple; fulvous white, whorls variegated and articulated at the upper part with brown or green, greenish, or purple-black at the lower, aperture and columella sometimes white, sometimes deep violet, edged with black.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 257. pl. 29. f. 4, 5.

Helix regina, De Férussac.

Achatina perversa, Swainson.

Achatina melanostoma, Swainson.

Eadem? *Bulimus phlogerus*, D'Orbigny.

Hab. Fig. 168 a. Interior of Peru; Poeppig. Fig. 168 b. Chopo, Province of Pamplona, New Granada; Funck, Linden. Fig. 168 c. British Guyana, Brazils. Bolivia; D'Orbigny.

* It will be seen by the above-mentioned localities that the *Bulimus regina* inhabits a wide range of country, and, by the figures, that it is found under very different aspects, having in some localities a dextral, in others a sinistral growth.

I quite agree with M. D'Orbigny in the propriety of referring this species to the genus under consideration rather than to *Achatina*; the columella is never strictly truncated, and the shell has all the texture, form, and colouring of a *Bulimus*.

Figure 90 b. (Mus. Dennison.)

BULIMUS ZEBRA. This species is also found under so many different aspects, that I thought it desirable to figure a singular variety from the collection of Mr. Dennison, of which that gentleman possesses several examples exactly similar, brought by some vessel into Liverpool, but he is not aware from whence. It is of a remarkably solid growth, heavy as porcelain, and has no indication of the green which predominates more or less in most varieties. The upper part of the whorls is white, the lower encircled by a broad band of light rust colour, and towards the aperture the whorl is crossed by numerous concentric dark streaks.



169. a.



160. b.



169. b.



170.



171.



173.



172.

BULIMUS.

PLATE XXVIII.

Species 160. (Fig. 160 b. Mus. Cuming.)

BULIMUS FULMINANS. The shell here represented is that in Mr. Cuming's collection, described by Dr. Pfeiffer under the name of *B. Loveni*, Pro. Zool. Soc., 1847, p. 229. It is without doubt identical with the *B. fulminans* described at Pl. XXIV., though lighter in structure and of less acuminate growth.

Species 169. (Mus. Cuming.)

BULIMUS MILLERI. *Bul. testâ ovato-oblongâ, spirâ sub-obtusâ, anfractibus quinque, tumidiusculis, obliquè convolutis, aperturâ subcontractâ, labro reflexo; castaneo-fuscâ, epidermide sericeâ, transversim minutè granuloso-crispatâ, indutâ, peritremate roseo.*

MILLER'S BULIMUS. Shell ovately oblong, spire rather obtuse, whorls five in number, rather swollen, obliquely convoluted, aperture somewhat contracted, lip reflected; chesnut-brown, covered with a silken epidermis, which is transversely minutely granulously crisped, peritreme rose-coloured.

SOWERBY, Conch. Illus. f. 94.

Hab. Brazil.

This beautiful species is mainly distinguished by its exquisite silken epidermis, which exhibits two or three bands towards the base, not of colour, but of light and shade, as in a shot-silk.

Species 170. (Mus. Cuming.)

fibratus (marlon)
BULIMUS AURIS-MIDÆ. *Bul. testâ oblongo-vel elongato-ovatâ, subcompressâ, anfractibus sex, lævibus aut irregulariter rugoso-striatis, ultimo valdè majore, columellâ callosâ plicæformi, interdum duabus, munitâ, aperturâ amplâ; fulvescente-albâ, epidermide olivaceo-castaneâ indutâ, aperturæ fauce rufescente-croceâ, peritremate lacteâ.*

THE MIDAS' EAR BULIMUS. Shell oblong or elongately ovate, a little compressed, whorls six in number, smooth or irregularly roughly striated, last whorl very much the larger, columella furnished with a plait-like callosity, sometimes two, aperture large; fulvous white, covered with an olive chesnut epidermis, interior of the aperture reddish chesnut, peritreme cream colour.

Auris-Midæ terræ australis, Chemnitz, Conch. Cab. vol. ix. p. 42. pl. 121. f. 1039, 1040.

Bulimus fibratus, Gray.

Hab. New Caledonia.

We are informed by Chemnitz in the ninth volume of the Conchylien Cabinet, published in 1786, that this shell was known to Favanne as "a very rare *Buccinum* from New Holland bearing some resemblance to the false Midas' Ear," meaning the *Auricula Midæ*, which Bruguière referred to his genus *Bulimus* under the same specific title as that used by Chemnitz in reference to this. We also learn from the same source that it was known to English collectors upwards of half a century ago, as 'The Midas' Ear from New Caledonia.' Lamarck, however, and his followers appear to have confounded it with the *B. auris-bovina*, from which, as described at Pl. XXX., it is amply distinguished.

The chief variation in the growth of the present species consists in some specimens being of an elongated form as represented in Chemnitz, and of which a specimen exactly agreeing with that figure is before me, and in others being of a compressed oblong tumid growth, as in the shell represented in the accompanying plate. Both varieties are distinguished by a plait-like callosity on the columella and the rich orange-red painting of the interior, but are equally distinct from the *B. Shongi* or *auris-bovina*.

Species 171. (Mus. Cuming.)

BULIMUS FUNCKII. *Bul. testâ elongato-oblongâ, subcylindraceâ, crassiusculâ, anfractibus quinque ad sex, longitudinaliter irregulariter rudè striatis, lævibus, apicem versus subtilissimè corrugato-reticulatis, columellâ subarcuatâ, labro fortiter reflexo; rufo-castaneâ, epidermide olivaceâ crassâ indutâ, aperturâ livido-fuscâ, peritremate fumeo-aurantio.*

FUNCK'S BULIMUS. Shell elongately oblong, somewhat cylindrical, rather thick, whorls five to six in number, longitudinally irregularly rudely striated, smooth, very finely corrugately reticulated towards the apex; columella slightly arched, lip strongly reflected; reddish chesnut, covered with a thick olive epidermis, interior of the aperture livid brown, peritreme smoky orange.

NYST, Mém. Société Royale de Liège, vol. i.

July, 1848.

Bulimus superbus, Jonas.

Bulimus Caripensis, Valenciennes.

Hab. Caripi, Venezuela (in the crevices of high mountains); Funck, Dyson.

First discovered by M. Funck, and subsequently by Mr. Dyson, who found the species in great abundance at Caripi, Venezuela, where the natives were observed to collect and roast the animals for food. It is a rather solid shell of a cylindrically oblong form, and of a peculiar smoky tint of colour.

At the time M. Nyst was engaged in describing this species, it happened that Mr. Cuming, whilst passing through Belgium, observed to him that he had some recollection of its being already described in the Zoological Journal, under the name *B. labeo*. Upon this M. Nyst, in a subsequent notice of the species, took some considerable pains to exhibit the difference between the *B. labeo* and *Funckii*, reproducing the description and figure of the former for comparison, side by side, with the latter. M. Nyst is no doubt to be complimented for his ability and zeal in the matter, but in so doing he unconsciously attaches an importance to a passing conversational remark, a mere *lapsus-linguæ*, or rather *-memoriæ*, which the speaker never intended. The species are too far removed from each other to admit of two opinions.

Species 172. (Mus. Cuming.)

BULIMUS MELANOCHILUS. *Bul. testâ elongato-oblongâ, subumbilicatâ, anfractibus sex, longitudinaliter rudè striatis, per marginem superiorem crenatis, apicem versus subtilissimè corrugatis; columellâ subcontortâ, aperturâ parviusculâ, labro reflexo; castaneo-brunneâ, medio et infra suturas indistinctè fasciatâ, epidermide luteo-olivaceâ indutâ, aperturæ fauce et peritremate livido-nigricantibus.*

THE BLACK-LIP BULIMUS. Shell elongately oblong, slightly umbilicated, whorls six in number, longitudinally rudely striated, crenated along the upper margin, very finely corrugated; columella a little twisted, aperture rather small, lip reflected; chesnut brown, indistinctly banded round the middle and beneath the sutures, covered with a yellowish olive epidermis, interior and peritreme of the aperture livid-black.

NYST, *Bul. Acad. Royale de Bruxelles*, vol. xii.—Extrait, p. 8. pl. 3. f. 3 a, b.

Hab. Paraguay.

Chiefly remarkable for the peculiar livid black-lead hue of the enamel, which lines the interior and peritreme of the aperture.

Species 173. (Mus. Cuming.)

BULIMUS RHODOCHEILUS. *Bul. testâ oblongo-ovatâ, spirâ breviusculâ, anfractibus quinque, tumidiusculis, undique minutissimè granulatis; columellâ subcontortâ, aperturâ supernè contractâ, labro expanso; castaneâ, strigis albis longitudinalibus, peculiariter undatis et reticulatis, notatâ, epidermide corneâ lutescente indutâ, peritremate roseo.*

THE ROSE-LIP BULIMUS. Shell oblong ovate, spire rather short, whorls five in number, somewhat swollen, very minutely granulated throughout; columella slightly twisted, aperture contracted round the upper part, lip expanded; chesnut brown, marked with longitudinal white streaks which are peculiarly waved and reticulated, covered with a yellowish horny epidermis, peritreme rose-coloured.

Hab. Brazil.

The light waved marks which distinguish this species have a singular net-work-like appearance, and the peritreme of the aperture is a particularly deep crimson rose.



175.



174.



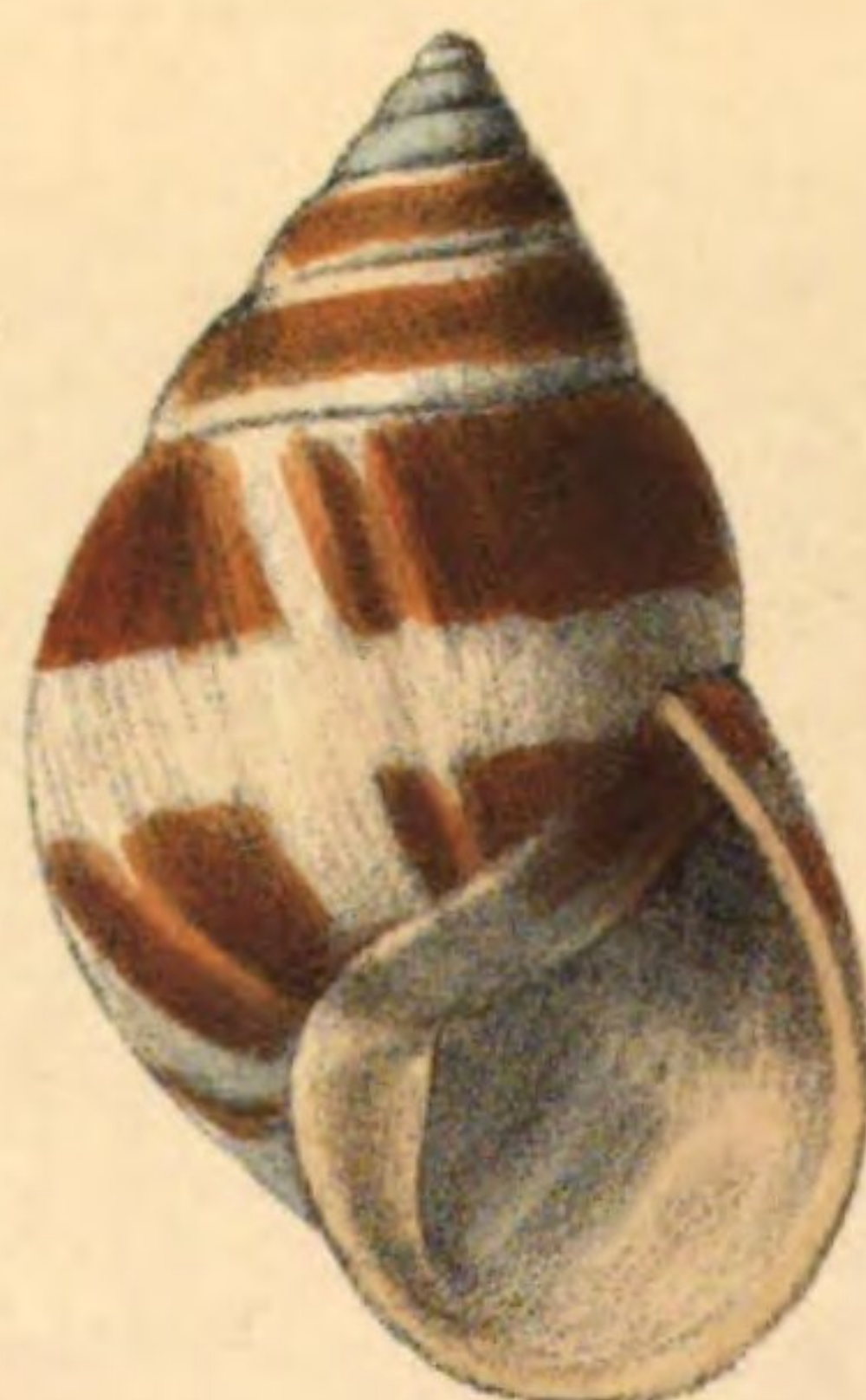
176.



177. a.



177. b.



179.



178.

BULIMUS.

PLATE XXIX.

Species 174. (Mus. Cuming.)

BULIMUS MALLEATUS. *Bul. testā oblongo-ovatā, inflatā, spirā breviusculā, acuminatā, anfractibus quinque longitudinaliter striatis, transversim peculiariter corrugatis, anfractu ultimo peramplo; columellā fortiter uniplicatā, labro latè reflexo; albā, castaneo hic illic sparsim irregulariter maculatā, intus lutescente.*

THE BEATEN BULIMUS. Shell oblong-ovate, inflated, spire rather short, acuminate, whorls five in number, longitudinally striated, transversely peculiarly wrinkled, last whorl very large; columella strongly one-plaited, lip broadly reflected; white, sparingly and irregularly spotted here and there with chesnut, interior yellowish.

JAY, Catalogue of Shells.

Hab. *W. W.*

The chesnut spots of this shell, which is now comparatively well known to collectors, have very much the appearance of scattered fragments of horny epidermis.

Species 175. (Mus. Cuming.)

BULIMUS FULGURATUS. *Bul. testā oblongo-ovatā, umbilicatā, subinflatā, anfractibus quinque longitudinaliter exilissimè striatis, transversim peculiariter corrugatis, columellā fortiter uniplicatā, labro latè reflexo; albā, fusco longitudinaliter undato-strigatā, epidermide luteo-olivaceā indutā, apicem versus rosaceā.*

THE LIGHTNING-STRUCK BULIMUS. Shell oblong-ovate, umbilicated, somewhat inflated, whorls five in number, longitudinally very faintly striated, transversely peculiarly wrinkled, columella strongly one-plaited, lip widely reflected; white, longitudinally streaked in a waved manner with brown, and covered with a yellowish olive epidermis, pinkish towards the apex.

JAY, Catalogue of Shells.

Plekocheilus gracilis, Broderip.

Bulimus eximius, mihi, in Conch. Syst.

Hab. Feejee Islands.

Although the *B. fulguratus* is of a more cylindrically oblong form than the preceding species, and of a different colour and pattern, it is very similar in regard to sculpture, and in the strongly plaited columella. The transversely corrugated surface of these is rarely met with in the genus.

Species 176. (Mus. Cuming.)

BULIMUS HARTWEGII. *Bul. testā elongato-oblongā, subcylindraceā, anfractibus sex, convexis, longitudinaliter rudè striatis, per marginem crenulatis, columellā angustā, rectā, aperturā parviusculā, labro simplici, vix reflexo; ustulato-spadiceā, nigricante-fusco hic illic irregulariter angustè strigatā, intus violascente-albā.*

HARTWEG'S BULIMUS. Shell elongately oblong, somewhat cylindrical, whorls six in number, convex, longitudinally rudely striated, crenulated along the margin, columella narrow, straight, aperture rather small, lip simple, scarcely reflected; scorched bay colour, irregularly marked here and there with narrow streaks, interior violet-tinged white.

PFEIFFER, Monog. *Bul.*

Hab. El Catamaija, Loxa, Quito; Hartweg.

The columella, though solidified, seems inclined to roll back, after the manner of those species approaching to *Achatina*.

Species 177. (Fig. a. Mus. Cuming. Fig. b. Mus. Dennison.)

BULIMUS DOWNESII. *Bul. testā pyramidal-oblongā, spirā acuminatā, apice obtuso; anfractibus septem convexis, margine crenatis, concentricè peculiariter plicato-rugatis, rugis hic illic plus minusve tumidis; columellā contortā et retrorsum curvatā, aperturā subrotundatā, labro reflexo; anfractuum parte superiori purpurascente aut ustulato-rufescente, rugis hic illic albis, inferiori sæpissimè castaneo-nigricante, columellā et peritremate roseis, vel pallidè coccineis, intus cærulescente-albā.*

DOWNES' BULIMUS. Shell pyramidally oblong, spire acuminate, obtuse at the apex; whorls seven in number, convex, crenated at the edge, concentrically peculiarly plicately wrinkled, wrinkles here and there swollen; columella twisted and curved back, aperture somewhat rounded, lip reflected; upper part of the whorls purplish or of a burnt red colour, wrinkles here and there white, lower part of the whorls most frequently chesnut black, columella and peritreme rose or scarlet-tinged, interior bluish white.

GRAY, Sowerby, Conch. Illus. f. 99.

Hab. Prince's Island, West Coast of Africa; Fraser.

July, 1848.

There are apparently two well-marked varieties of this species, one of a deep burnt red colour, dark chesnut-black round the lower part, with a rose lip as in the richly coloured specimen here figured from the collection of Mr. Dennison; the other of a purplish colour, merely brownish towards the lower part and having the lip tinged with scarlet, as in Mr. Cuming's specimen.

Several fine examples of *B. Downesii* were collected by Mr. Fraser at the above-mentioned island, during his adventure in the unfortunate Niger Expedition.

Species 178. (Mus. Dennison.)

BULIMUS AURIPIGMENTUM. *Bul. testā pyramidalī-elongatā, spirā acuminatā, anfractibus septem, lævibus, plano-convexis; columellā angustā, rectā, quasi revolutā, aperturā parviusculā, labro simplici, acuto; peculiariter rufescente-spadiceā, anfractibus flammis brevibus irregularibus erectis, castaneis et albis, basi cingulatis, anfractu ultimo fasciā castaneā latā.*

THE ORPIMENT BULIMUS. Shell pyramidally elongated, spire acuminate, whorls seven in number, smooth, flatly convex, columella narrow, straight, as if rolled back, aperture rather small, lip simple, sharp; of a peculiar reddish bay, the whorls being encircled round the base with irregular short erect chesnut and white flames, last whorl with a broad chesnut band.

Hab. — ?

A very handsome characteristic new species totally distinct from any hitherto known, for which I am indebted to the liberality of J. Dennison, Esq., who possesses two examples agreeing with each other in the minutest detail.

Species 179. (Mus. Cuming.)

BULIMUS FAVANNII. *Bul. testā ovatā ventricosā, umbilicatā, spirā breviusculā, acuminatā, suturis impressis; anfractibus septem, concentricè striatis, lævibus, columellā latā, aperturā subcontractā, labro vix reflexo; albā, maculis grandibus quadratis, rufescente-fuscis supernè et infernè nebulatā.*

FAVANNE'S BULIMUS. Shell ovate, ventricose, umbilicated, spire rather short, acuminate, sutures impressed; whorls seven in number, concentrically striated, smooth, columella broad, aperture a little contracted, lip scarcely reflected; white, clouded above and below with large square reddish brown spots.

LAMARCK, Anim. sans vert. vol. viii. p. 227.

Helix Favannii, Férussac.

Bulimus cinctus, Jay.

Hab. Eastern Islands.

Easily distinguished by its style of painting, the colour being arranged round the upper and lower parts of the whorls in large oblong-square blotches, generally flowing irregularly one into the other.



181



180



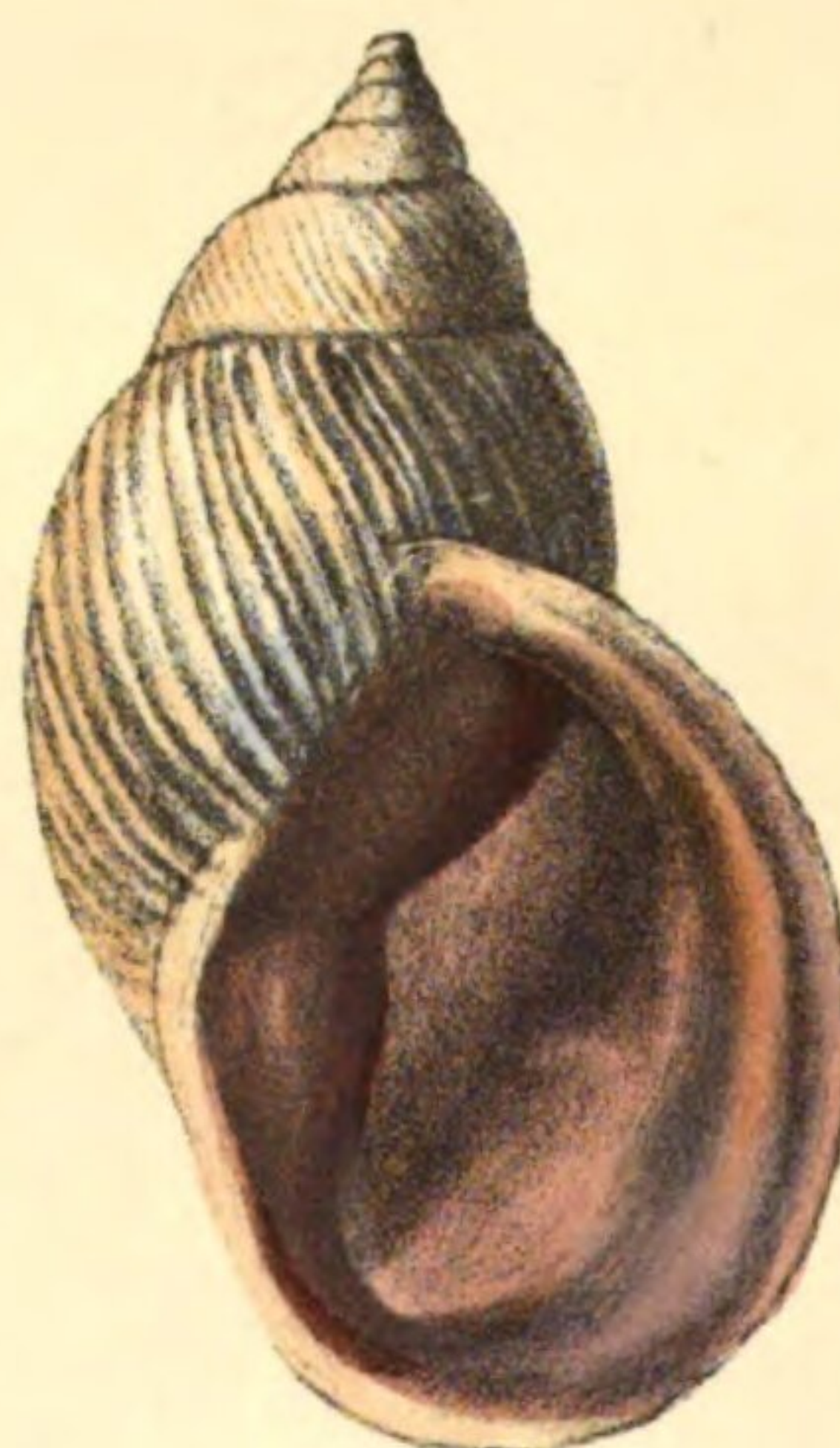
182



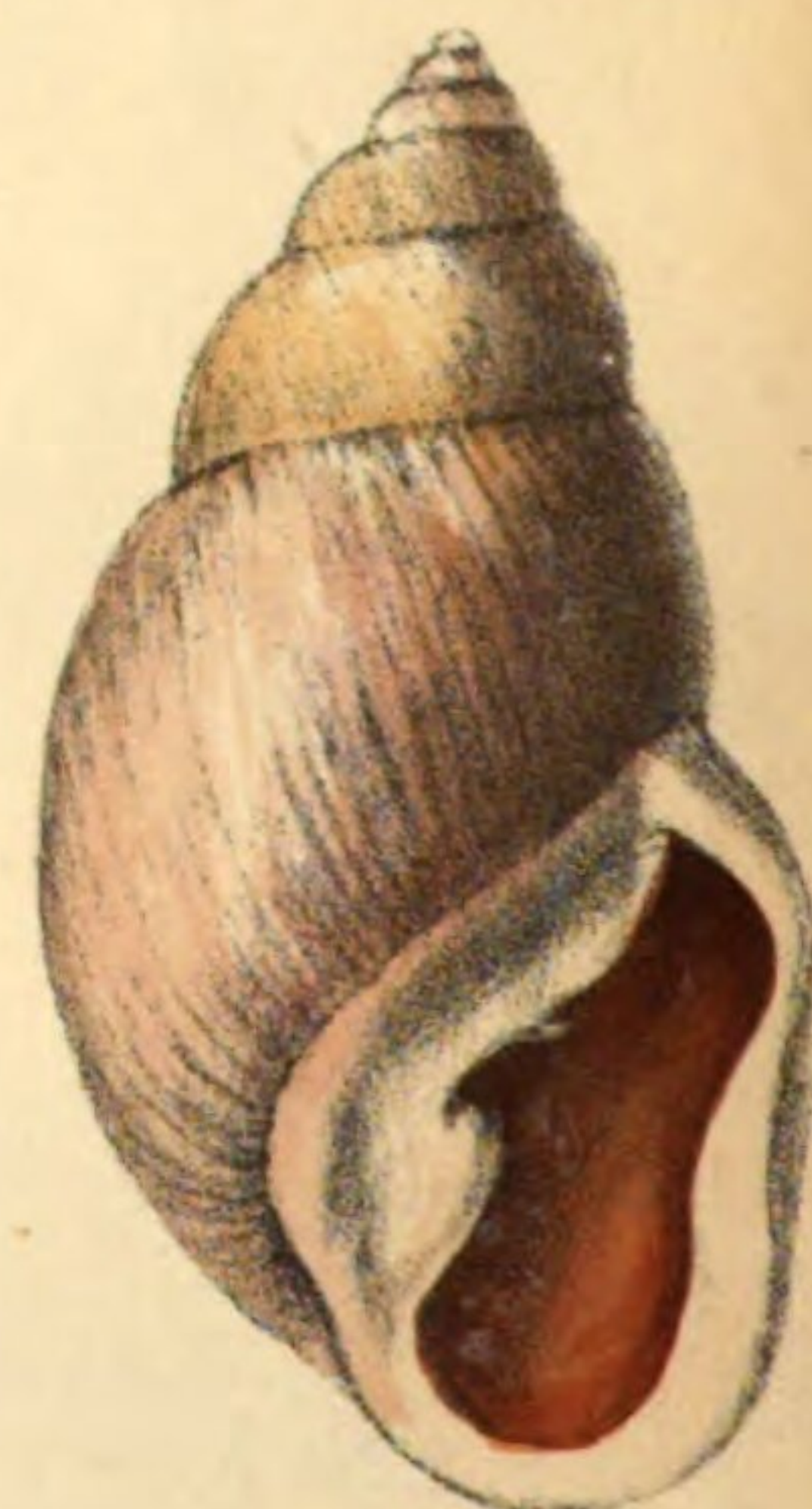
183



184



186



185

BULIMUS.

PLATE XXX.

Species 180. (Mus. Cuming.)

BULIMUS AURIS-VULPINA. *Bul. testā ovatā, ventricosā, subumbilicatā, spirā subacuminatā, anfractibus septem, transversim et longitudinaliter rudē rugoso-striatis, supernè depressè angulato-rotundatis et corrugato-crenatis; columellā profundè excavatā, basi contortā, labro incrassato, rudē reflexo, aperturā sinuatā et contractā; sordidè albā, columellā croceo-rufā, apice et aperturæ fauce pallidè crocatis.*

THE FOX-EAR BULIMUS. Shell ovate, ventricose, slightly umbilicated, spire somewhat acuminate, whorls seven in number, transversely and longitudinally roughly striated, depressly angularly rounded and puckered above; columella deeply excavated, twisted at the base, lip thickened, rudely reflected, aperture sinuated and contracted; dead white, columella saffron-red, apex and interior of the aperture faintly tinged with saffron colour.

DESHAYES, Anim. sans vert. vol. viii. p. 257.

Auris vulpina, Chemnitz.

Voluta auris-vulpina, Dillwyn.

Helix auris-vulpina, Férussac.

Hab. St. Helena.

A curious species of which several specimens have been found in a semi-fossil state at St. Helena, supposed to have belonged to a mollusk now extinct; none having been collected in a living state.

Species 181. (Mus. Cuming.)

BULIMUS HANLEYI. *Bul. testā elongato-oblongā, sub-turritā, tenui, semipellucidā, spirā acuminatā, suturis impressis; anfractibus septem, lævibus, nitentibus, plano-convexis, per marginem superiorem subtiliter et creberrimè crenulatis, crenulis in sulcis minutis descenditibus, columellā labroque tenuibus, simplicibus; rufo-castaneā, intus iridescente.*

HANLEY'S BULIMUS. Shell elongately oblong, somewhat turrited, thin, semipellucid, spire acuminate, sutures impressed; whorls seven in number, smooth, shining, flatly convex, very finely and closely crenulated along the upper margin, the crenules descending in fine grooves, lip and columella thin, simple; reddish-chesnut, iridescent within.

PFEIFFER, Monog. *Bul.*

Hab. Brazil; Miller.

A light turriculated shell of a peculiar reddish mahogany brown-colour, the sutures of which are somewhat deeply impressed, whilst the upper edge of the whorls is very finely crenulated, the crenules being delicately prolonged.

Species 182. (Mus. Cuming.)

BULIMUS SPIXII. *Bul. testā elongato-turritā, subcylindraceā, spirā acuminatā, apice concavo-depressā; anfractibus septem, plano-convexis, longitudinaliter subtilissimè corrugato-striatis, per marginem crenulatis; columellā peculiariter incisā, aperturā parvā, labro subincrassato, vix recurvo; corneo-fuscā, obscurè fasciatā, epidermide luteo-olivaceā indutā, labro et aperturæ fauce pallidè carneo-rosaceis, subiridescentibus.*

SPIX'S BULIMUS. Shell elongately turrited, somewhat cylindrical, spire acuminate, concavely depressed at the apex; whorls seven in number, flatly convex, longitudinally very finely striated in a wrinkled manner, crenulated along the edge; columella peculiarly notched, aperture small, lip somewhat thickened, but slightly recurved; flesh-tinted brown, obscurely banded, covered with a yellowish-olive epidermis, lip and interior of the aperture flesh-tinged rose, slightly iridescent.

WAGNER, Test. Bras. p. 11. pl. 10. f. 3.

Columna bulimea, Spix.

An eadem junior, *Bulimus hyalinus*, Wagner.

Hab. Brazil.

The notched columella is a very conspicuous feature in this species, which, in fine condition, is not white as hitherto described, but of a flesh-tinged rose hue, banded with brown and covered by a yellowish-olive epidermis.

Species 183. (Mus. Cuming.)

BULIMUS IMPERATOR. *Bul. testā pyramidalis-ovatā, anfractibus sex, lævibus, ultimo basin versus subangulato, columellā rectā; purpureo-nigricante, epidermide spadiceo-albo, undato-strigatā indutā, aperturā cærulescente-albā, columellā rosaceo-purpurascete, peritremate nigricante.*

THE EMPEROR BULIMUS. Shell pyramidally ovate, whorls six in number, smooth, last whorl slightly angled

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towards the base, columella straight; purple-black, covered with an epidermis marked with zigzag streaks of fawn-white, aperture bluish-white, columella pinkish-purple, peritreme black.

PFEIFFER, Pro. Zool. Soc., 1848.

Hab. Philippine Islands; Kierulf.

I doubt if 'The Pretender' would not have been a more appropriate name for this shell than 'The Emperor,' for it appears to be simply a variety of *B. pythagaster*. It would, however, be unfair to judge of its claim to rank as a species by a single specimen not in the best condition. Mr. Cuming informs me that it was collected at the Philippines by Dr. Kierulf of Copenhagen, and that there is another exactly similar to it in the collection of M. Janelle of Paris; and further, that he never collected any *B. pythagaster* with this peculiar zigzag style of marking.

Species 184. (Mus. Cuming.)

BULIMUS ATOMATUS. *Bul. testā oblongo-ovatā, Achatina-formi, tenui, anfractibus sex, lævibus, inflatis, per marginem leviter crenulatis; columellā rectā, reflexā, labro externo, tenui, simplici; flavescēte-brunnēā, castaneo-rufo minutē undato-lineatā et punctatā, intus cærulescente-albā.*

THE MINUTELY DOTTED BULIMUS. Shell oblong-ovate, Achatina-shaped, thin, whorls six in number, smooth, inflated, slightly crenulated along the edge; columella straight, reflected, outer lip thin, simple; yellowish-brown, minutely lineated and dotted in a waved manner with chesnut-red, interior bluish-white.

GRAY, Pro. Zool. Soc., 1834, p. 64.

Hab. Near Fort Macquarrie, New Holland.

A singularly marked species having somewhat the form of the large African *Achatina*.

Species 185. (Mus. Dennison.)

BULIMUS AURIS-BOVINA. *Bul. testā elongato-oblongā, crassā, spirā subacuminatā, anfractibus sex, rugoso-striatis; columellā incrassatā, callositatibus duabus munitā, quarum inferiori peramplā, solidā; aperturā*

parvā, peculiariter contractā, labro valdē incrassato; rufescente-albā, aperturæ fauce vividē rufā, columellā labroque eburneis.

THE OX-EAR BULIMUS. Shell elongately oblong, thick, spire somewhat acuminate, whorls six in number, roughly striated, columella thickened, furnished with two callosities, of which the lower is very large and solid, aperture small, peculiarly contracted, lip very much thickened; reddish-white, interior of the aperture deep red, lip and columella ivory white.

BRUGUIERE, Enc. Méth. dict. no. 80.

Auricula bovina, Lamarek.

Helix auris-bovina, Férussac.

Hab. Eastern Islands.

The *Bulimi Shongi* and *auris-Midæ* have each been confounded in its turn with the present species, which is eminently distinguished from them; first, in being of a natural white, which obtains a reddish hue, owing to the interior being very deeply stained with that colour; secondly, in the aperture being small and much contracted; thirdly, in being of more solid growth, and fourthly, in the lip and columella being like white porcelain or polished ivory.

Species 186. (Mus. Cuming.)

BULIMUS DOMBEYANUS. *Bul. testā ovatā, umbilicatā, spirā breviusculā, mucronatā, anfractibus sex ad septem, subrotundatis, concentricè rugatis; columellā subcontortā, reflexā, labro latissimè expanso et reflexo; albā, columellā et aperturæ fauce intensè lacco-purpureis.*

DOMBEY'S BULIMUS. Shell ovate, umbilicated, spire rather short, pointed, whorls six to seven in number, somewhat rounded, concentrically wrinkled; columella a little twisted, reflected, lip very widely expanded and reflected; white, interior deeply coloured with purple-lake.

Helix Dombeyana, Férussac, Hist. Moll.

Hab. Mexico.

This beautiful and very rare species is chiefly remarkable on account of the trumpet-like expansion of the aperture, which is of a deep purple-bronze colour.



187.b



187.a



188.



189.



190.



192.



191.

BULIMUS.

PLATE XXXI.

Species 187. (Fig. a, Mus. Hudson; Fig. b, Mus. Cuming.)

BULIMUS CITRINUS. *Bul. testá subelongato-ovatá, crassiusculá, aut dextrá aut sinistrá, anfractibus sex ad septem, subrotundatis, lævibus, nitidis; vividè citrino-flavá, interdum rufescente-fusco flammátá, prope suturas albá, vittá longitudinali castaneo-nigrá interdum pictá, labro et peritremate albis.*

THE CITRON BULIMUS. Shell somewhat elongately ovate, rather thick, either dextral or sinistral, whorls six to seven in number, somewhat rounded, smooth, shining; bright citron yellow, sometimes flamed with reddish brown, white near the sutures, sometimes painted with a chesnut-black longitudinal fillet, lip and peritreme white.

BRUGUIERE, Enc. Méth. dict. no. 27.

Helix perversa (pars?), Linnæus.

Helices dextra, and *sinistra*, Muller.

Helix aurea, Férussac.

Hab. Moluccas.

This species is so well known by its long-established name, *B. citrinus*, that I have hesitated to adopt the Linnæan title *Helix perversa*, believing it probable that the author of the *Systema Naturæ*, included more than one reversed species under that appellation.

Species 188. (Mus. Cuming.)

BULIMUS ATRICALLOSUS. *Bul. testá oblongo-ovatá, basin versus subinflátá, spirá acuminatá; anfractibus sex ad septem, subrotundatis, lævibus, nitidis, labro expanso, latè reflexo; albidá, viridescente-luteo tinctá, parte supra columellam laminá callosá intensè purpureo-nigrá indutá, anfractu ultimo vittá simili longitudinali pictá, aperturá albá.*

THE BLACK-CALLOUS BULIMUS. Shell oblong-ovate, somewhat inflated towards the base, spire acuminate, whorls six or seven in number, somewhat rounded, smooth, shining, lip expanded, widely reflected; white, stained with greenish yellow, the part above the columella covered with a callous deep purple-black lamina, last whorl painted with a longitudinal fillet of the same colour, aperture white.

GOULD, Boston Journ. Nat. Hist.

Hab. Tavoy, Burmah.

I fear there is not much difference between this and the

preceding species, beyond the callous purple-black lamina which lines the interior of the body-whorl, and is of somewhat doubtful importance.

Species 189. (Mus. Cuming.)

BULIMUS LINDENI. *Bul. testá cylindraceo-oblongá, crassiusculá, apice obtusè depressá, anfractibus quinque ad sex, decussatim rudè striatis et subtiliter indentatis, per marginem exiliter crenulatis; columellá uniplicatá, aperturá parviusculá, labro subincrassato, reflexo; lacteá, nigro sparsim strigatá, apicem versus purpurascete, epidermide olivaceo-viridi indutá, aperturæ fauce cærulescente-albá, labro pallidè crocato.*

astrapoides
(Tonnas)

LINDEN'S BULIMUS. Shell cylindrically oblong, rather thick, apex obtusely depressed, whorls five to six in number, decussately rudely striated and finely indented, faintly crenulated along the margin; columella one-plaited, aperture rather small, lip somewhat thickened, reflected; cream colour, sparingly streaked with black, purplish towards the apex, and covered with an olive-green epidermis, interior of the aperture bluish white, lip pale saffron colour.

Bulimus leptocheilus, Pfeiffer.

Hab. La Baja, Province of Pamplona, New Granada; Funck, Linden.

Notwithstanding the importance which is very properly attached to the priority of names, there are exceptions, as in the instance before us, in which a name may require to be changed. The term *leptocheilus*, or *thin-lipped*, denotes a character which is not found in the adult species; the shells of all *Bulimi* are "thin-lipped" in an immature state, and many remain so at maturity; but in the species under consideration, the lip is thickened and rather widely reflected. I therefore venture to name it anew, in honour of the indefatigable botanist and shell-collector, to whom we are indebted for so many beautiful species of *Bulimi* from the luxuriant district of New Granada.

Species 190. (Mus. Cuming.)

BULIMUS PLANIDENS. *Bul. testá oblongo-oviformi, tenuiculá, spirá brevi, acuminatá, anfractibus quinque, tumidis, longitudinaliter creberrimè corrugato-striatis, striis minutissimis transversis sub lente decussatis, aper-*

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turá oblongo-quadrata, parviusculá, contractá, labro dente unico planulato instructo; olivaceo-virescente, aperturá cærulescente-albá, peritremate intensè purpureo-roseo.

THE FLAT-TOOTHED BULIMUS. Shell oblong egg-shaped, rather thin, spire short, acuminate, whorls five in number, swollen, longitudinally very closely striated in a wrinkled manner, and, under the lens, crossed with very minute transverse striæ, aperture oblong-square, rather small, contracted, furnished with a single flattened tooth; light olive-green, aperture bluish white, peritreme deep purple-rose.

MICHELIN, Magasin de Zool. pl. 25.

Hab. Brazil.

The surface of this species, in fine condition, has a delicate silken aspect, occasioned by a multitude of extremely fine transverse striæ, which are scarcely discernible without the aid of a lens. The epidermis is of a peculiar plum-green colour, and the lip of an intense purple-rose, distinguished by an oblong flattened tooth.

Species 191. (Mus. Cuming.)

BULIMUS PUDICUS. *Bul. testá oblongo-ovatá, spirá brevi, acuminatá, anfractibus quinque tumidiusculis, undique striato-corrugatis, columellá uniplicatá, labro expanso, latè reflexo; olivaceo-rufá, peritremate nunc albo, nunc vividè roseo.*

THE CHASTE BULIMUS. Shell oblong-ovate, spire short, acuminate, whorls five in number, rather swollen, striately wrinkled throughout, columella one-plaited, lip expanded, widely reflected; olive-red, peritreme sometimes white, sometimes deep rose.

DESHAYES, Anim. sans vert., vol. viii. p. 253.

Helix pudica, Linnæus, Syst. Nat. (Gmelin's edit.) p. 3645.

Partula pudica, De Férussac.

Helix pudica, Moricand.

Auris virginea, Chemnitz.

Voluta auris-virginis, Dillwyn.

Bulimus virginicus, Bruguière.

Strophocheilus Almeida, Spix.

An eadem var. *Bulimus perplexus*, Sowerby.

Hab. Brazil.

M. Deshayes has already observed that the shell figured by Chemnitz under the name of *Auris virginea* (Conch. Cab. vol. ix. pl. 121. f. 1042) has a different aspect from that commonly known to us as the *B. pudicus*, figured in the accompanying plate, and among the shells collected by Dr. Spix in Brazil. The *Auris virginea* has more the form of a *Partula*, but I find no shell to correspond with it, and take it to be merely another state of the species under consideration.

(Species 192. Mus. Cuming.)

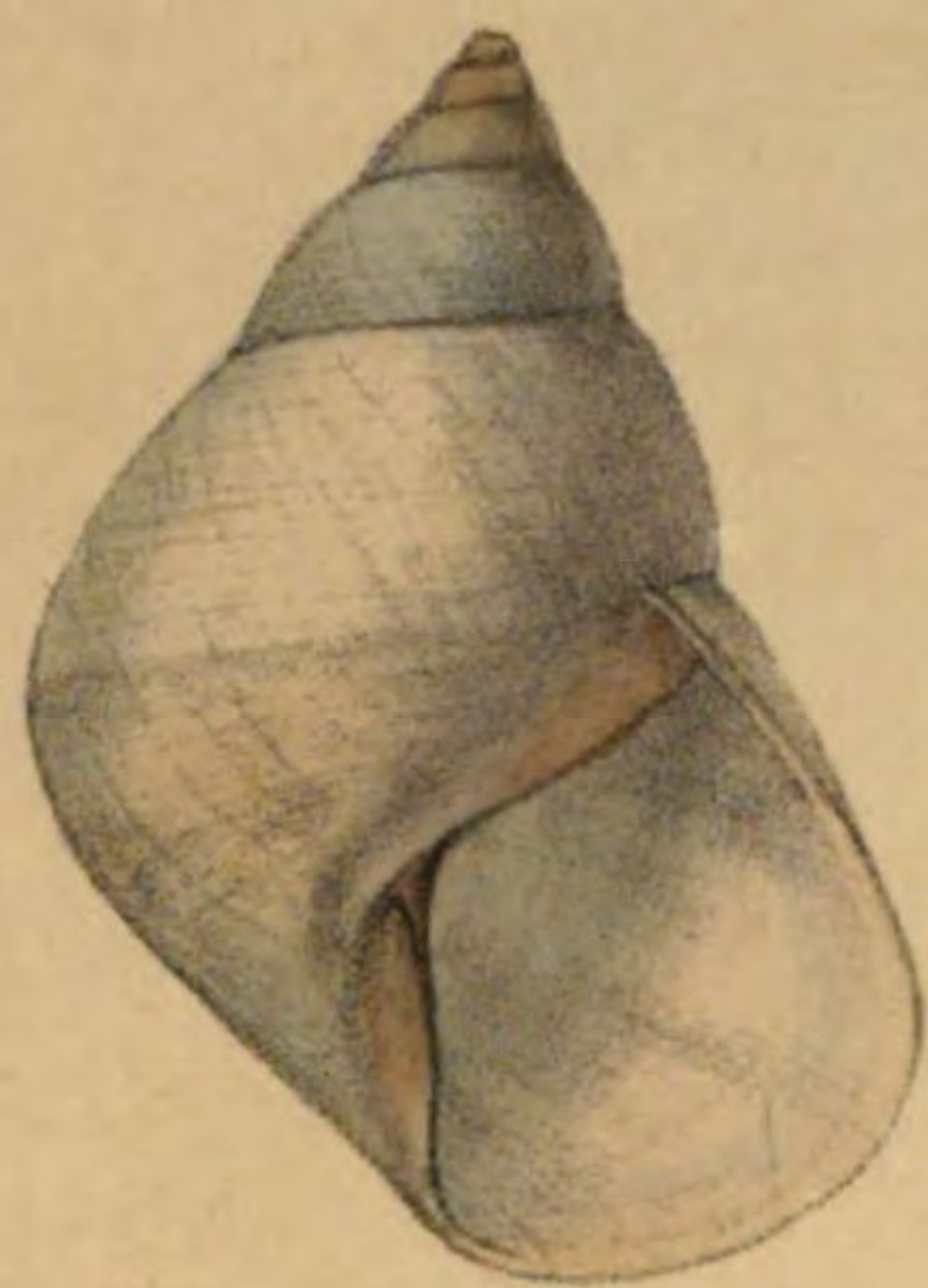
BULIMUS UNIDENTATUS. *Bul. testá oblongo-ovatá, spirá breviusculá, anfractibus quatuor ad quinque, tumidis, subrugosis, aperturá parviusculá, labro reflexo, dente unico obtuso instructo; albidá, roseo tinctá, columellá labroque purpureo-castaneis.*

THE ONE-TOOTHED BULIMUS. Shell oblong-ovate, spire rather short, whorls four to five in number, swollen, rather rough, aperture somewhat small, lip reflected, furnished with a single blunt tooth; whitish, tinged with rose, lip and columella purple-chesnut.

Partula unidentata, Sowerby, Tankerville Catalogue, App. p. vii.

Hab. Brazil.

I am not aware that any example of this species is known in fine condition with its epidermis. It is of more solid growth than the *B. planidens*, and of a less oblong form, whilst the tooth is short and blunt, not oblong and flattened. The species differ essentially also in colour.



194.



193.



195.



196.



197.



198.



199.

BULIMUS.

PLATE XXXII.

Species 193. (Mus. Cuming.)

BULIMUS GUERINI. *Bul. testā oblongo-ovatā, tenuiculā, apice subobtusā, anfractibus quinque, lævibus, subinflatis, columellā subcontortā, labro vix reflexo; intensè olivaceā, luteo longitudinaliter strigatā, aperturæ peritremate aurantio.*

GUERIN'S BULIMUS. Shell oblong-ovate, rather thin, somewhat obtuse at the apex, whorls five in number, smooth, slightly inflated, columella somewhat twisted, lip scarcely reflected; very dark olive, longitudinally streaked with yellow, peritreme of the aperture orange.

PFEIFFER, Pro. Zool. Soc., 1846, p. 40.

Hab. New Granada.

Although much smaller in size and of comparatively lighter growth, this species approximates so closely to the *B. Moritzianus*, which is found in the same locality under a multitude of aspects, that I fear it may prove to be only a dwarf variety.

Species 194. (Mus. Cuming.)

BULIMUS CRYSTALLINUS. *Bul. testā conico-ovatā, tenui, pellucidā, valdè inflatā, anfractibus quinque ad sex, transversim undique subtilissimè impresso-striatis, anfractu ultimo peramplo, basin versus obtusè carinato, columellā concavo-depressā, vix reflexā, labro tenui, simplici; pellucido-albā, columellā brunnescente.*

THE CHRYSTALLINE BULIMUS. Shell conically ovate, thin, pellucid, very much inflated, whorls five to six in number, transversely very finely impressly striated throughout, last whorl very large, obtusely keeled towards the base, columella concavely depressed, slightly reflected, lip thin, simple; transparent white, columella pale brown.

Hab. — ?

Of very peculiar form, and differing in all respects from any species hitherto described. It is a light transparent shell, transversely engraved with fine striæ, very much inflated, and indistinctly angled towards the base.

Species 195. (Mus. Cuming.)

BULIMUS MONOZONUS. *Bul. testā subpyramidal-ovatā, apice obtusā, anfractibus quinque, rotundatis, obliquè striatis, columellā rectā, labro vix reflexo; rufescente-*

brunneā, zonā latiusculā albā, in anfractu ultimo tantum conspicuā, cingulatā; epidermide fuscā indutā, peritremate nigricante,

THE ONE-ZONE BULIMUS. Shell somewhat pyramidally ovate, obtuse at the apex, whorls five in number, rounded, obliquely striated, columella straight, lip but slightly reflected; reddish brown, encircled by a rather wide white zone, conspicuous only on the last whorl, and covered with a brown epidermis, peritreme blackish.

PFEIFFER, Monog. *Bul.*

Hab. Philippines; Kierulf.

Collected in the Philippine Islands by Dr. Kierulf of Copenhagen, and apparently distinct from any of Mr. Cuming's species.

Species 196. (Mus. Cuming.)

BULIMUS GIBBONIUS. *Bul. testā ovatā, umbilicatā, crassiusculā, ventricosissimā, anfractibus quatuor ad quinque, longitudinaliter rudè striatis, undique minutè granulatis, anfractu ultimo peramplo, inflato, columellā subcontortā, labro reflexo; castaneo-rufescente, fusco sparsim punctatā, aperturā albidā.*

GIBBON'S BULIMUS. Shell ovate, umbilicated, rather thick, extremely ventricose, whorls four to five in number, longitudinally rudely striated, minutely granulated throughout, last whorl very large, inflated, columella slightly twisted, lip reflected; chesnut red, sparingly dotted with brown, aperture whitish.

LEA, Trans. Amer. Phil. Soc., 1836.

Hab. Between La Plata and Tocaima, New Granada; Dr. Gibbon.

Distinguished by the widely-inflated and rapid enlargement of the last whorl; of a chesnut colour, besprinkled with dashes of brown.

Species 197. (Mus. Cuming.)

BULIMUS CASTANEUS. *Bul. testā ovatā, vix umbilicatā, ventricosissimā, anfractibus quatuor ad quinque, longitudinaliter rudè striatis, granulis rudibus oblongis prope suturas seriatim cingulatis, anfractu ultimo peramplo, inflato, labro vix reflexo; intus extusque fumeo-castaneā.*

THE CHESNUT BULIMUS. Shell ovate, scarcely umbilicated, extremely ventricose, whorls four to five in

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number, longitudinally rudely striated, encircled near the sutures with rows of rude oblong granules, last whorl very large, inflated, lip but slightly reflected, smoky chesnut-brown within and without.

PFEIFFER, Pro. Zool. Soc., 1845, p. 68.

Hab. Vegas, on the river Quendou, New Granada.

It may be observed that this shell is almost equally ventricose and inflated with the preceding species, though not exactly of the same form. It is, moreover, of lighter structure, and, instead of being covered with granules, it has merely a few near the sutures of a rude oblong shape, set in exact rows more or less distant from each other.

Species 198. (Mus. Cuming.)

BULIMUS GALLINA-SULTANA. *Bul. testā conico-ovatā, tenui, ventricosissimā, anfractibus sex, transversim creberrimè striatis, striis rugosis et minutè undulatis, anfractu ultimo peramplo, inflato, labro simplici; albicante, olivaceo-viridi maculatā et variegatā, epidermide flavidā indutā.*

THE SULTAN-FOWL BULIMUS. Shell conically ovate, thin, extremely ventricose, whorls six in number, transversely very closely striated, striæ rough and minutely undulated, last whorl very large, inflated, lip simple; whitish, blotched and variegated with olive green, and covered with a yellowish epidermis.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 222.

La poule sultane, Favanne.

Helix gallina-sultana, Chemnitz.

Achatina pavonina, Spix.

Hab. Bolivia; D'Orbigny.

"We met with the *B. gallina-sultana*," says M. D'Orbigny, "in the hot damp forests, inhabited by the savage Guarayos, in the centre of the republic of Bolivia. There, they bury themselves among the roots of trees and only come forth during the rainy season; they then crawl upon the trunk and stems to inhale the moisture, and as soon as the rains begin to cease, they descend and again bury themselves in the earth, where they remain concealed until the following season."

Species 199. (Mus. Cuming.)

BULIMUS HETEROTRICHUS. *Bul. testā conico-ovatā, sub-globosā, umbilicatā, anfractibus sex ad septem, rotundatis, striis undique sub lente minutè decussatis, columellā latiusculā, labro exiliter reflexo; olivaceo-flavidā, epidermide setosā indutā, setis subtilibus, in seriebus spiralibus subdistantibus.*

THE DIFFERENTLY-BRISTLED BULIMUS. Shell conically ovate, somewhat globose, umbilicated, whorls six to seven in number, rounded, under the lens minutely decussated throughout with striæ, columella rather broad, lip delicately reflected; olive yellow, covered with a bristly epidermis, of which the bristles are fine and arranged in rather distant spiral rows.

MORICAND, Mém de Genève, vol. 2. part. 2. p. 430. pl. 2. f. 5, 6.

Hab. Brazil,

Well characterized by its delicate bristly epidermis, deprived of which, the species may be equally recognised by its peculiar form and minute decussated sculpture, looking, as it were, like a fine web of punctures.



200.



201. a.



201. b.



202.



203. a.



203. c.



203. b.

BULIMUS.

PLATE XXXIII.

Species 200. (Mus. Cuming.)

BULIMUS SIGNATUS. *Bul. testā oblongo-ovatā, umbilicatā, spirā brevi, acuminatā, anfractibus quinque, rugulosis, columellā basi callosā, rudē plicatā, aperturā angustā, contractā, auriformi, labro reflexo et latissimè concavo-expanso; albidā, fasciis tribus latis nigricantibus cingulatā, fuscoque nebulatā, apice nigro, labro eburneo.*

THE MARKED BULIMUS. Shell oblong-ovate, umbilicated, spire short, acuminate, whorls five in number, rough, columella callous at the base and obsoletely plaited, aperture narrow, contracted, ear-shaped, lip reflected and very widely concavely expanded; whitish, encircled with three broad blackish bands and clouded with brown, apex black, lip ivory white.

Auricula signata, Wagner, Moll. du Brèsil, p. 17. pl. 12. f. 3.

Helix signata, Moricand.

Hab. Brazil.

The wide-spread development of the lip is rather a peculiar feature in this species. It is not uncommon.

Species 201. (Mus. Cuming.)

BULIMUS BILABIATUS. *Bul. testā ovatā, spirā acuminatā, anfractibus quinque, subrotundatis, rugulosis, sub lente minutè rudē reticulatis et foratis, peculiariter obliquè plicato-costatis, costis compressis; columellā subcontortā, aperturā auriformi, labro undique bisecto; sordidè albā, fusco hic illic tinctā, parte suprà columellam nunc aurantiā, nunc purpureo-nigrā.*

THE TWO-LIPPED BULIMUS. Shell ovate, spire acuminate, whorls five in number, somewhat rounded, rough, under the lens minutely reticulated and punctured, peculiarly obliquely plicately ribbed, ribs compressed; columella rather twisted, aperture ear-shaped, lip divided in twain all round; dead white, stained here and there with brown, the part above the columella sometimes orange, sometimes purple-white.

BRODERIP and SOWERBY, Zool. Journ. vol. v. p. 49. pl. supp. 40. f. 1, 2.

Helix maximiliana, Férussac, MSS.

Hab. Brazil.

The name *B. maximiliana* of De Férussac does not appear to have been published. There is a very characteristic dwarf state of the species exhibiting the same varieties of colouring as those of a larger growth.

Species 202. (Mus. Cuming.)

BULIMUS TAUNAYSII. *Bul. testā elongato-oblongā, subcylindraceā, anfractibus sex ad septem, convexis, lævibus, longitudinaliter striatis, columellā subcontortā, labro tenuiculo, vix reflexo; fulvo-vel nigricante-fuscā, zonulā pallidā angustā cingulatā, columellā albā.*

TAUNAY'S BULIMUS. Shell elongately oblong, somewhat cylindrical, whorls six to seven in number, convex, smooth, longitudinally striated, columella somewhat twisted, lip rather thin, scarcely reflected; fulvous or blackish brown, encircled by a pale narrow zone, columella white.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 294.

Helix Taunaysii, Férussac.

Eadem. Bulimus magnificus, Grateloup.

Hab. Brazil.

The shell named *B. magnificus* by M. Grateloup is, according to the specimens so marked in Mr. Cuming's collection, a variety of *B. Taunaysii* of a lighter brown colour.

Species 203. (Fig. a. Mus. Dennison. Fig. b, and c. Mus. Cuming.)

BULIMUS MELANOSTOMA. *Bul. testā oblongo-ovatā, spirā subacuminatā, anfractibus quinque ad sex, undique peculiariter oblongo-granulatis, per marginem minutè crenulatis et plicatis, plicis subamplis distantibus, in anfractu ultimo evanidis; columellā contortā, labro latè reflexo, interdum partim bisecto; roseo-albicante, fuscescente obscurè nebulatā, spirā apicem versus sæpe rosaceā, inter plicas nigricante, aperturā partim vel omnino purpureo-nigrā, interdum croceo marginatā.*

THE BLACK-MOUTH BULIMUS. Shell oblong-ovate, spire somewhat acuminate, whorls five to six in number, peculiarly oblong-granulated throughout, minutely crenulated along the margin, and plicated, the plaits being rather large and distant, fading away in the last whorl; columella twisted, lip widely reflected, sometimes partially bisected; pinkish-white, obscurely clouded with pale brown, spire frequently pinkish towards the apex, blackish between the folds, aperture partially or entirely purple-black, sometimes edged with saffron yellow.

SWAINSON, Zool. Illustrations, vol. i. pl. 4.

July, 1848.

Helix melanostoma, Férussac.

Auris melanostoma, Spix.

Eadem. *Helix rhodospira*, Moricand.

Hab. Brazil.

The varieties of this species are strongly indicated in the distribution of the colouring matter of the aperture.

In most specimens the aperture is wholly lined with rich purple black, as in fig. 203 *c.*; in some, the lip is produced a second time outwardly, as in fig. 203 *a*, bordered with saffron yellow; whilst in others, as in fig. 203 *b*, the aperture is white, and no purple-black is seen, excepting on the body whorl above the columella.



205.



204. b



206.



204. a

BULIMUS.

PLATE XXXIV.

Species 204. (Mus. Dennison.)

BULIMUS POPELAIRIANUS. *Bul. testā ovatā, ventricosissimā, crassiusculā, subcompressā, anfractibus tumidis, supernè crenulatis, apicem versus concentricè subdistanter liratis et minutissimè granulatis; columellā arcuatā, ætate supernè callosā, labro incrassato, reflexo; castaneo-brunnescente, epidermide crassā corneā brunneā, in strigis longitudinalibus acutè undatis interdum peculiariter dissolutā, indutā; aperturā lividā, labro albo.*

POPELAIR'S BULIMUS. Shell ovate, extremely ventricose, rather thick, somewhat compressed, whorls swollen, crenulated round the upper part, concentrically somewhat distantly ridged and minutely granulated towards the apex; columella arched, callous at the upper part with age, lip thickened, reflected; light chesnut-brown, covered with a thick brown epidermis, which is sometimes peculiarly dissolved, as it were, in longitudinal zigzag streaks; aperture livid, lip white.

NYST, Bull. Acad. Roy. de Bruxelles, vol. xii. Extr. p. 10. pl. 4. f. 5.

Eadem. *Bulimus fulguratus*, Valenciennes.

Bulimus Valenciennesii, Pfeiffer.

Hab. Brazil.

This fine zigzag-marked species, distinguished under the above names by Pfeiffer and Valenciennes, is, without doubt, the same described by M. Nyst in the Transactions of the Royal Academy of Brussels in honour of the Baron de Popelair. Mr. Cuming possesses a specimen, like M. Nyst's, quite destitute of the zigzag marking, which is not a distribution of colour, nor the result of a double-membrane arrangement of the epidermis, as in the Philippine species; it has rather the appearance of being partially dissolved, as though it were occasioned by the percolation of some solvent out of the sutures, though incapable of such an explanation.

Species 205. (Mus. Cuming.)

BULIMUS EGREGIUS. *Bul. elongato-oblongā, subfusiformi, umbilicatā, anfractibus convexiusculis, supernè concavis, undique creberrimè plano-granulatis, granulis in seriebus transversis ad intervalla subdistantia, majoribus, anfractu ultimo basi angulato-compresso; aperturā oblongo-ovali, basi angulatā et canaliculatā, labro subexpanso et reflexo, marginibus lirā angustā callosā junctis; castaneo-fuscā, luteo flammata, labro intense roseo.*

THE CHOSEN BULIMUS. Shell elongately oblong, somewhat fusiform, umbilicated, whorls rather convex, concave round the upper part, very closely flatly granulated throughout, granules in transverse rows, at rather distant intervals, larger, last whorl angularly compressed at the base; aperture oblong-oval, angulated and channelled at the base, lip slightly expanded and reflected, margins joined by a narrow callous ridge; chesnut-brown, flamed with yellow, lip deep rose.

PFEIFFER, Pro. Zool. Soc., 1845, p. 67.

Bulimus hybridus, Gould (fide Pfeiffer).

Hab. Brazil, in the vicinity of Rio Janeiro; Gould.

I much doubt whether this is anything more than a variety of the *B. goniostoma*. I have not met with it in a state intermediate between the specimens here represented, but it is certain that the sculpture of *B. egregius* is precisely that of *B. goniostoma* in an exaggerated and more luxuriant condition, whilst the species are alike in form.

Species 206. (Mus. Cuming.)

BULIMUS GONIOSTOMA. *Bul. testā elongato-oblongā, fusiformi, umbilicatā, spirā acuminatā, anfractibus convexiusculis, supernè concavis, undique minutissimè et creberrimè granulatis, granulis, in seriebus transversis ad intervalla subdistantia, paulo majoribus, anfractu ultimo basi compresso; aperturā oblongo-ovali, basi canaliculatā, labro subexpanso et reflexo, marginibus lirā callosā junctis; badiā, labro intense roseo.*

THE ANGLED-MOUTH BULIMUS. Shell elongately oblong, fusiform, umbilicated, spire acuminate, whorls slightly convex, concave round the upper part, very minutely and closely granulated throughout, the granules in transverse rows at rather distant intervals a little larger, last whorl compressed at the base; aperture oblong oval, channelled at the base, lip somewhat expanded and reflected, margins joined by a callous ridge; brown, lip deep rose.

Cochlogena goniostoma, Férussac, Prodrôme, No. 441.

Pupa goniostoma, Gray.

Goniostoma erubescens, Swainson.

Hab. Brazil.

Quite an isolated form of the genus, few species presenting much approximation to this in respect of its angular oblong channelled aperture, besides the preceding and one or two of smaller size, to be described hereafter, from the Province of Merida, New Granada.

August, 1848.



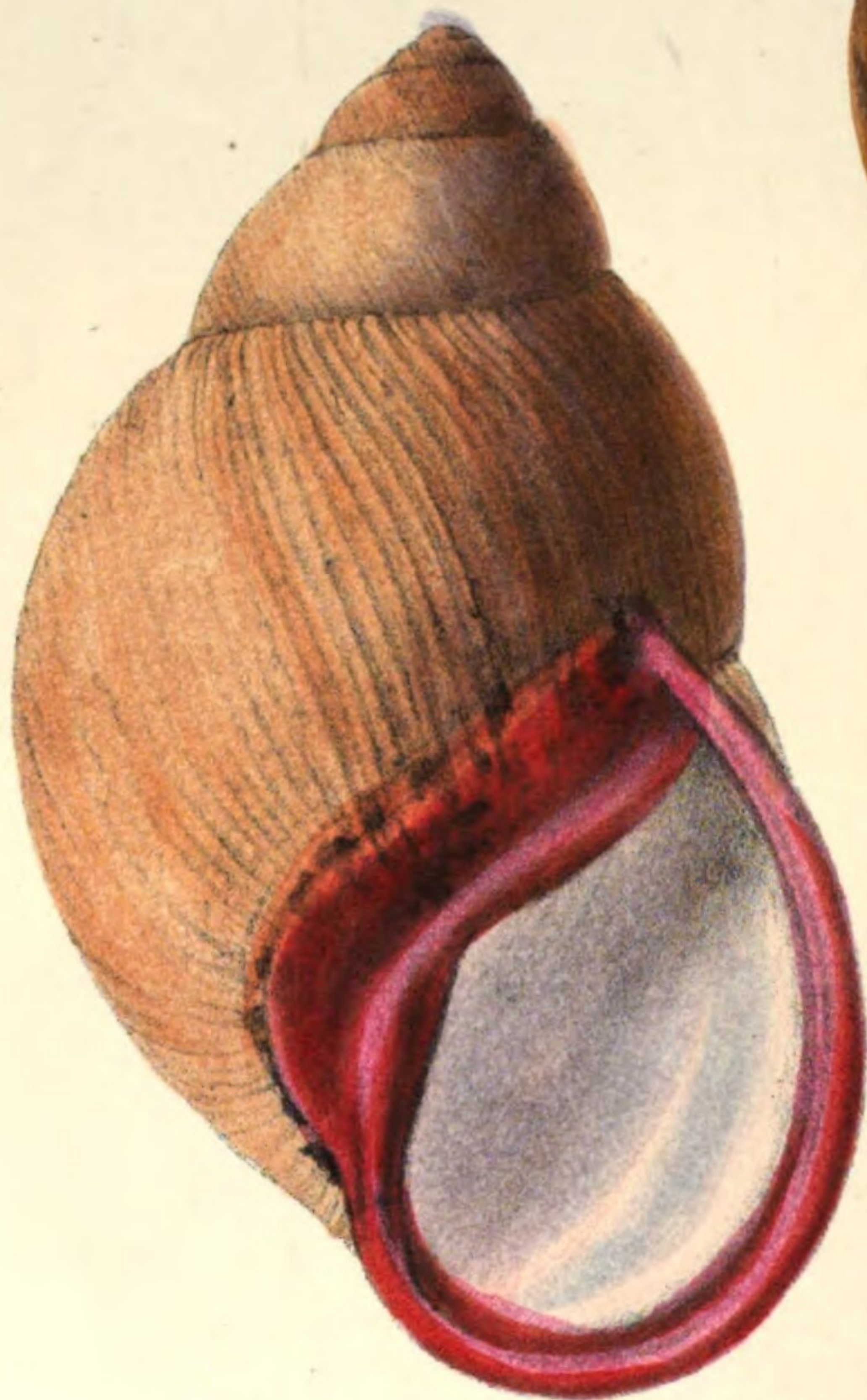
208.



207.



209.



210.

BULIMUS.

PLATE XXXV.

Species 207. (Mus. (?) olim Soc. Zool. Lond.)

The accompanying figure, copied from the Zoological Journal, Tab. Supp. xxxi, represents a very remarkable species of *Bulimus*, deposited some years since in the Zoological Society's Museum. The shell, however, disappeared shortly afterwards from the collection, together with some other rarities, and the species has never since been obtained or heard of. It only remains therefore to copy the description also.

BULIMUS LABEO. *Bul. testā ovato-productā, fusco-castaneā, apicem versus rubrā, fusco variā, anfractibus sex, ventricosis, ultimo fasciis duabus nigris, hāc mediā, illā suturali, penultimo fasciis duabus nigris, suturalibus; columellā dente obtuso insigni; labro crassissimo, reflexo, supra pallidē castaneo, infra nigro; aperturā intus albidā.*

THE BLUBBER-LIP BULIMUS. Shell ovately produced, brown-chesnut, red towards the apex, variegated with brown, whorls six in number, ventricose, the last with two black bands, one round the middle, the other next the suture, penultimate whorl with two bands, both sutural; columella with a remarkable obtuse tooth, lip very thick, reflected, pale chesnut above, black beneath, interior of the aperture whitish.

BRODERIP, Zool. Journal, vol. iv. p. 222. pl. supp. xxxi.
Hab. Peru.

To quote Mr. Broderip's more minute description of this remarkable lost species:— "Shell stout, long oval, of a brown chesnut colour, changing to red at the apex and on the upper whorls, which last are longitudinally striped with reddish brown towards the suture. Whorls six, ventricose; the last has a narrow band across its middle, and another of the same colour close to the suture, which is white; the last whorl but one has two narrow black bands, both near the sutures; the lower bands on the last and penultimate whorls are each thrice interrupted. On the last whorl, near the base, which is very dark, is a faint, broad, lighter coloured band. The columella is remarkable for its obtuse white tooth, surrounded by the rich dark colouring of the aperture. The right lip is of huge thickness, and much reflected: above, it is of a light chesnut colour; below, of a rich brownish japan-like black, which, particularly where it is shading off into the chesnut, gives, when the light is thrown full on it, the same kind of iridescent appearance as is seen in the Lumachella, or Fire-marble. The lower edge of this rich lip is punctured

pretty thickly with dots, resembling those of *Cypræa testudinaria*, which seem filled with a whitish opaque substance, and the formation of which has given an irregular, and almost fungus-like appearance to the reflected border of the lip, on its upper side. The interior of the aperture is white. Length three inches; breadth, measured across the body whorl, and including the lip, one inch and six-eighths.

"This fine shell, of a much firmer fabric than most land-shells, was obtained by Lieut. Maw, R.N., in a rancho (farm-house) at Toulea, about nine leagues to the eastward of Chachapoyas, in Peru, on Christmas day, 1827. It had been taken on the chacra (farm) to which the rancho belonged. The chacra is situated at the highest limit of the montana, or woody district, on the eastern side of the Andes, at an elevation of about 8000 feet above the level of the sea. The species was frequently seen by Lieut. Maw in the woods between Chachapoyas and Moyabamba. Two of a much larger size than the individual here described, were found by him alive, and given in charge to the arriero (muleteer), with a special injunction to take care of them. The arriero, supposing that they were to be prepared for breakfast, roasted them, and thus destroyed the shells.

"Spix has not mentioned this shell, and I have reason to believe that there is no other specimen in this country. Whether the species is confined within narrow limits in the almost untrodden district traversed by Lieut. Maw, will be an interesting subject for future inquiry. This enterprising traveller is the first European who has performed a journey across the continent of South America in the line of the Marañon, or Amazon River. After passing from Truxillo across the Andes to Chachapoyas he embarked upon the river in Peru, and proceeded throughout its course to Para. In the course of this expedition he collected several animals, which he has liberally presented, together with the subject of this memoir, to the Zoological Society."

Species 208. (Mus. Cuming.)

BULIMUS LACUNOSUS. *Bul. testā oblongo-ovatā, anfractibus subventricosis, longitudinaliter striatis, striis brevibus impressis peculiariter subtilissimè notatis, apicem versus minutè granulatis et radiatim liratis, columellā vix contortā, labro reflexo; livido-brunneā, longitudinaliter obscurè fasciatā, epidermide tenuiculā corneā indutā, labro albo.*

August, 1848.

THE RAVINE-INHABITING BULIMUS. Shell oblong-ovate, whorls somewhat ventricose, longitudinally striated, and peculiarly very finely marked besides with short impressed striæ, minutely granulated and radiately ridged towards the apex, columella scarcely twisted, lip reflected; livid brown, longitudinally obscurely banded, covered with a rather thin horny epidermis, lip white.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 302.

Hab. Cochabamba, Bolivia (in deep ravines at the base of the snowy peaks of the Cordilleras); D'Orbigny.

Intermediate, in a manner, between the *B. maximus* and *ovatus*, of smaller size, and apparently distinct. In the specimen here figured from Mr. Cuming's collection, the surface is curiously marked by numerous rows of short longitudinal hollowed striæ; it is also encircled by a couple of scratched grooves, but these are evidently the result of accident.

Species 209. (Mus. Cuming.)

BULIMUS GRANULOSUS. *Bul. testâ oblongo-ovatâ, anfractibus ventricosis, longitudinaliter rudè striatis, undique minutè granulatis, prope apicem subobscurè radiatim liris, columellâ subcontortâ, labro reflexo; luteo-brunnescente, epidermide tenuiculâ indutâ, columellâ labroque pallidè roseis, aperturæ fauce cæruleo-albicante.*

THE GRANULOUS BULIMUS. Shell oblong-ovate, whorls ventricose, longitudinally rudely striated, minutely granulated throughout, somewhat obscurely radiately ridged near the apex, columella somewhat twisted, lip reflected; yellowish brown, covered with a thin epidermis, lip and columella pale rose, interior of the aperture bluish white.

Helix granulosa, Rang, Descr. coquilles terrestres, p. 49. pl. 2.

Hab. Brazil.

It is much to be feared whether this is not truly a variety of the *B. ovatus*. The typical differences are as follows:—in form the *B. granulatus* is of a less shortened umid growth than the *B. ovatus*, and in sculpture, it is more prominently granulated throughout, whilst the radiated ridges about the apex are more obscure; it is,

moreover, of a lighter tint of colour, and varies considerably in the nature of the epidermis, which in this species is slight and fibrous, but in the *B. ovatus*, is thick, horny, and shining.

Species 210. (Mus. Cuming.)

BULIMUS OBLONGUS. *Bul. testâ oblongo-ovatâ, viz umbilicatâ, nunc subamplâ, tenuiculâ, ventricosâ, nunc parviorè, crassâ, ponderosâ, anfractibus convexis, plus minusve costulato-striatis, labro reflexo; fulvo-spadiceâ, columellâ labroque intensè roseis.*

THE OBLONG BULIMUS. Shell oblong-ovate, scarcely umbilicated, sometimes rather large, thin, and ventricose, sometimes smaller, thick, and ponderous, whorls convex, more or less sculptured with rib-like striæ, lip reflected; fulvous-bay, lip and columella deep rose.

Helix oblonga, Muller, Verm. vol. ii. p. 86.

Bulimus hæmastoma, Scopoli, Lamarck.

Hab. Eastern coast of South America.

This well-known species inhabits a wide range of country, and varies greatly in size and substance according to the local conditions of climate and vegetation, at one time large and ventricose like the specimen selected for illustration, at another smaller, thick, and ponderous, with the lip not unfrequently thickened to an extent truly remarkable.

M. D'Orbigny has some curious remarks on the habits and age of this species. "The *Bulimus oblongus*," says this intelligent traveller and naturalist, "buries itself deeply in the earth during the dry season, and comes forth at the time of the rains. Towards the close of the rainy season, it deposits its cretaceous eggs in the earth, and the young escape from them during the first rains which follow." The author then goes on to describe that about two or three years is occupied in the formation of the shell, when, having arrived at the age of maturity, the lip is reflected, and at a more advanced stage becomes more or less thickened according to circumstances. After an examination of what he considers to be annual marks of increase of growth, Mr. D'Orbigny arrives at the conclusion that the *Bulimus oblongus* lives for a period of about ten years.



211. b.



211. a.



211. c.

*Simf. Fig. 2. Is ungeborene
unter dem in Diagnose
gegeben für zu Dombeyanus.*



212.



213. a.



214.



215.

BULIMUS.

PLATE XXXVI.

Species 211. (Fig. a, Mus. Cuming, Fig. b and c, Mus. Dennison.)

Lattreii
(Pfeiffer)

BULIMUS FOCILLATUS. *Bul. testā oblongo-ovatā, anfractibus sex, (striis longitudinalibus arcuatis) peculiariter notatis, per marginem superiorem crenulatis, crenulis subdistantibus; columellā revolutā; aperturā amplā, effusā, labro expanso; pallidē stramineā, vel purpurascēte-spadiceā, maculis fasciisque cæruleo-nigricantibus interdum tinctis, columellā et aperturæ fauce roseo-purpureis.*

THE CHERISHED BULIMUS. Shell oblong-ovate, whorls six in number, peculiarly marked with arched longitudinal striæ, crenulated along the upper margin, crenules rather distant; columella rolled back; aperture large, effused, lip expanded; pale straw colour, or light salmon colour, sometimes painted with bluish-black bands and blotches, columella and interior of the aperture rose-purple.

Hab. Vera Cruz, South America.

A delicate and graceful species, extremely variable in its external colouring, but constant so far as regards the rose-purple painting of the aperture and columella.

Species 212. (Mus. Dennison.)

BULIMUS OVATUS. *Bul. testā subabbreviato-ovatā, tumidā, apice subobtusā; anfractibus quinque, longitudinaliter rudē striatis, apicem versus granulatis et subtiliter radiatim latis, labro fortiter reflexo; roseo-fuscescente, epidermide corneā olivaceā nitente indutā, aperturā cærulescente-albā, labro vividē roseo.*

THE OVATE BULIMUS. Shell somewhat abbreviately ovate, swollen, rather obtuse at the apex; whorls five in number, longitudinally rudely striated, granulated and finely radiately ridged towards the apex, lip strongly reflected; rose-brown, covered with a shining olive horny epidermis, aperture bluish-white, lip bright rose.

BRUGUIERE, Enc. Méth. Dict. no. 33.

Helix ovatus, Muller.

Bulla ovata, Chemnitz.

Hab. Brazil.

This fine species is remarkable for its curious abbreviately turgid growth, whilst it has a peculiar shining

horny epidermis, and the lip is mostly of an unusually deep crimson rose.

Species 213. (Mus. Cuming.)

BULIMUS ABYSSORUM. *Bul. testā oblongo-ovatā, tenuiculā, subinflatā, umbilicatā, anfractibus sex, rugoso-striatis, columellā revolutā, labro subexpanso; albidā, rufo-brunneo longitudinaliter strigatā et maculatā.*

THE ABYSS-INHABITING BULIMUS. Shell oblong-ovate, rather thin, somewhat inflated, umbilicated, whorls six in number, roughly striated, columella rolled back, lip somewhat expanded; whitish, longitudinally streaked and blotched with reddish-brown.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 308. pl. 39. f. 7, 8.

Hab. Pampa Ruis, eastern declivity of the Bolivian Andes (amongst stones at the roots of Cacti); D'Orbigny.

Towards the base of the shell the roughly striated sculpture produces almost the effect of obtuse granules.

Species 214. (Mus. Cuming.)

BULIMUS FENESTRATUS. *Bul. testā oblongo-ovatā, subfusiformi, umbilicatā, anfractibus sex ad septem, peculiariter undulatē corrugatā et sulcatā; columellā subplicatā, obliquē recedente, plano-revolutā; albidā, maculis fasciisque fusco-nigricantibus conspicuē fenestratā, columellā et aperturæ fauce roseo-purpurascēntibus.*

THE WINDOW-PAINTED BULIMUS. Shell oblong-ovate, somewhat fusiform, umbilicated, whorls six to seven in number, peculiarly undulately wrinkled and grooved; columella slightly plaited, obliquely receding, flatly rolled back; whitish, conspicuously latticed with brownish-black blotches and bands, columella and interior of the aperture lilac.

PFEIFFER, Pro. Zool. Soc. 1846. p. 29.

Hab. Mexico.

Perfectly distinguished from the preceding species in form, whilst the undulating grooved sculpture is peculiar.

Species 215. (Mus. Cuming.)

BULIMUS HYGROHYLÆUS. *Bul. testā subpyramidal-oblongā, Partulæformi, ampliter umbilicatā, anfractibus*

September, 1848.

septem, longitudinaliter rugoso-striatis; columellā latā, subrecedente, labro latè plano-reflexo; albidā, cæruleo-nigricante quinefasciatā et maculatā, labro nitidè albo.

THE DAMP-WOODS BULIMUS. Shell somewhat pyramidally oblong. Partula-shaped, largely umbilicated, whorls seven in number, longitudinally roughly striated; columella broad, slightly receding, lip

broadly and flatly reflected; whitish, encircled by five bands of bluish-black blotches, lip shining white.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 311. pl. 40. f. 3—5.

Hab. Province of Santa Cruz, Bolivia (in damp forests); D'Orbigny.

A very characteristic species readily distinguished from the preceding by the Partula-like growth of the aperture.



217. a.



216. a.



217. b.



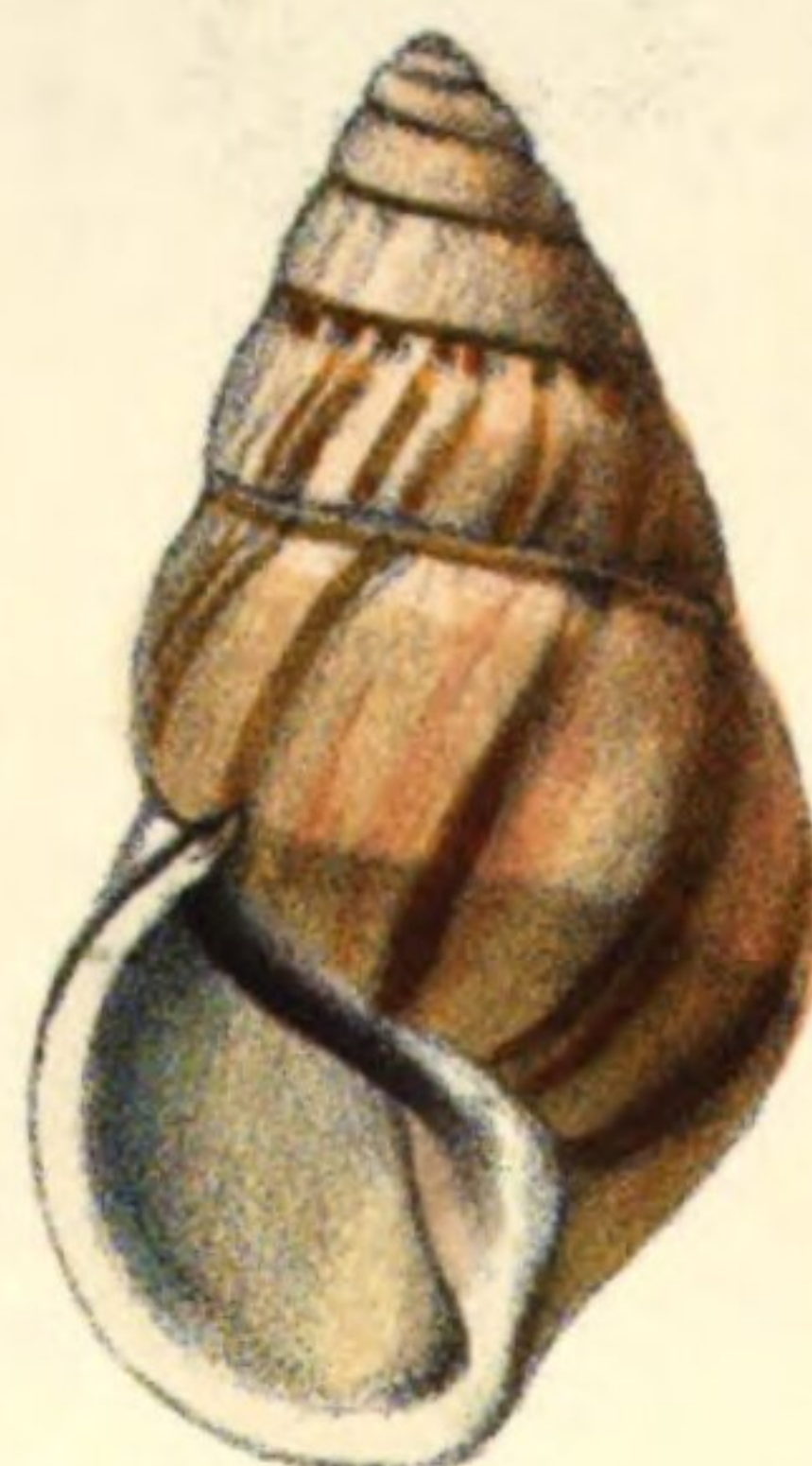
216. b.



219.



218.



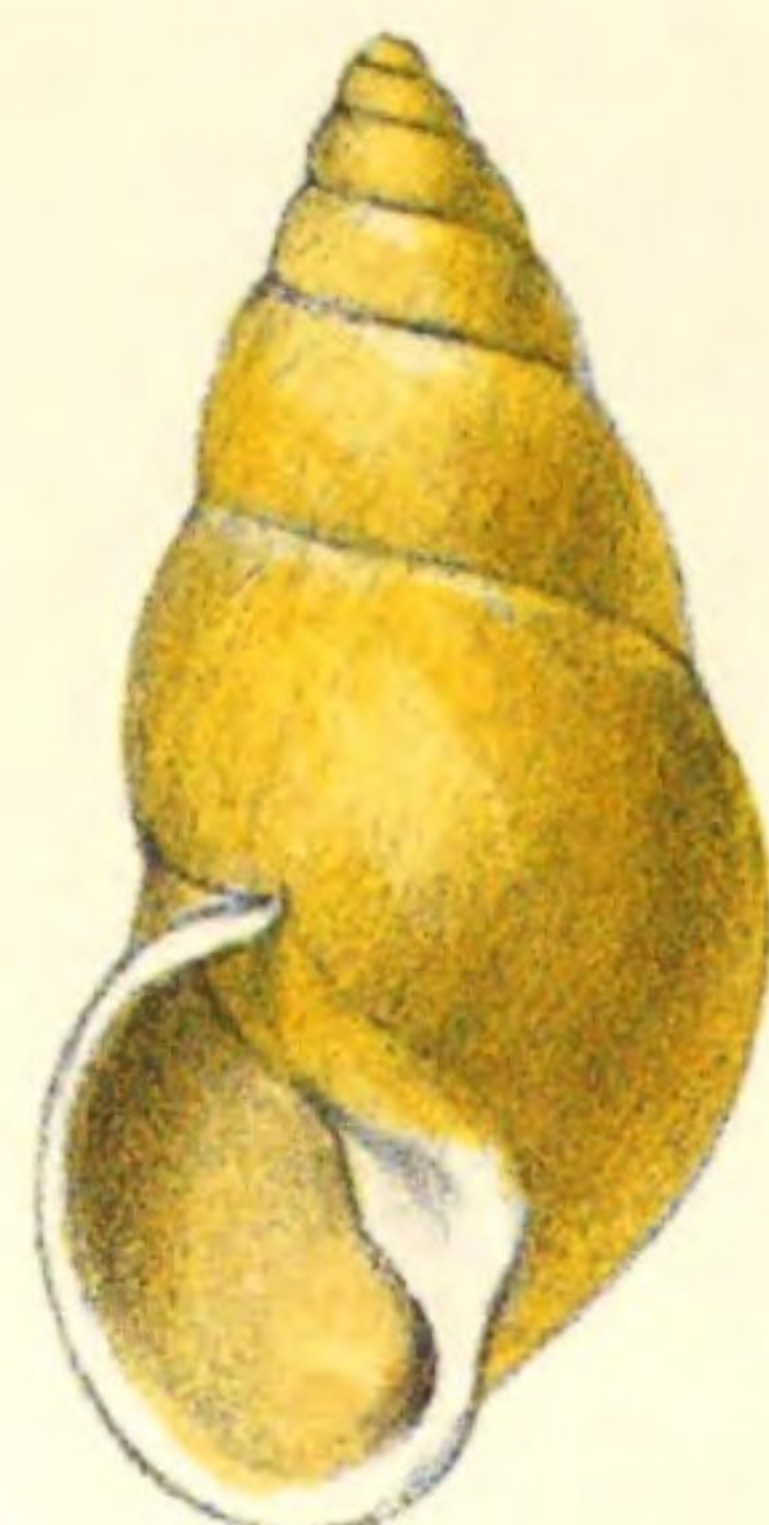
220.



222.



221.



223.

BULIMUS.

PLATE XXXVII.

Species 216. (Fig. a and b, Mus. Cuming.)

BULIMUS LÆVUS. *Bul. testā pyramidalī-oblongā, subcylindraceā, crassiusculā, interdum umbilicatā, anfractibus septem, subrotundis, lævibus; aperturā parviusculā, suborbiculari, labro fortiter reflexo; rufo-aurantiā aut luteā, fasciis rufo-olivaceis aut viridibus cingulatā, interdum longitudinaliter maculatā aut strigatā, labro nitidè albo.*

THE LEFT BULIMUS. Shell pyramidally oblong, somewhat cylindrical, rather thick, sometimes umbilicated, whorls seven in number, somewhat rounded, smooth; aperture rather small, nearly orbicular, lip strongly reflected; reddish orange or yellow, encircled with red-olive or green bands, sometimes longitudinally blotched or streaked, lip shining white.

BRUGUIERE, Enc. Méth. Vers, vol. 1. p. 317.

Helix læva, Muller.

Hab. Amboina and the Moluccas.

Little need be added to assist in the recognition of this well-known species, which is of a more pyramidal growth than *B. citrinus*, and distinguished by a greater variety of colouring. It is mostly sinistral.

Species 217. (Mus. Cuming.)

BULIMUS LACTARIUS. *Bul. testā ovatā, ventricosiusculā, umbilicatā, spirā subacuminatā, anfractibus sex ad septem, convexis, lævibus, aut longitudinaliter tenuistriatis; columellā latiusculā, labro simplici; cerino-albā, fumeo-rufescente interdum tinctā, floccis opacoblis irregularibus aspersā.*

THE MILK-SPOTTED BULIMUS. Shell ovate, rather ventricose, umbilicated, spire somewhat acuminate, whorls six to seven in number, convex, smooth, or longitudinally finely striated; columella rather broad, lip simple; waxen-white, sometimes tinged with smoky red, sprinkled with irregular flakes of opaque white.

MENKE, MSS.

Hab. Mexico.

The curious opaque-white flakes with which this shell is marked, constitute an important specific character.

Species 218. (Mus. Cuming.)

BULIMUS GOUDOTI. *Bul. testā ovatā, tenuissimā, pellucidā,*

ventricosā, anfractibus quinque, longitudinaliter rudè striatis, labro tenui, simplici; rufo-fuscescente, epidermide corneā olivaceā nitente indutā, aperturæ fauce iridescente.

GOUDOT'S BULIMUS. Shell ovate, very thin, transparent, ventricose, whorls five in number, longitudinally rudely striated, lip thin, simple; pale reddish brown, covered with a shining olive horny epidermis, interior of the aperture iridescent.

PETIT, Mag. de Zool.

Hab. Eastern Cordilleras, New Granada.

An extremely delicate shell of little more substance than a glassy film, protected by a thick shining horny epidermis.

Species 219. (Mus. Cuming.)

BULIMUS DUFRESNII. *Bul. testā cylindraceo-ovatā, oleiformi, apice obtusā; anfractibus quinque, apicem versus minutè granulosis, per marginem crenulatis, columellā subrecedente, labro simplici; luteo-viridescente, olivaceo-fusco fasciatā et lineatā.*

DUFRESNE'S BULIMUS. Shell cylindrically ovate, olive-shaped, obtuse at the apex; whorls five to six in number, minutely granulated towards the apex, crenulated along the margin, columella slightly receding, lip simple; yellowish green, banded and lineated with dark olive brown.

LEACH, Zool. Misc. vol. 2. p. 153. pl. 120.

Hab. Van Dieman's Land.

The painting of this species is mostly represented by a conspicuous central band, with fine longitudinally waved lines above and below it.

Species 220. (Mus. Cuming.)

BULIMUS CONTUSUS. *Bul. testā oblongo-ovatā, crassiusculā, sæpissimè sinistrali, anfractibus septem, convexis, lævibus, labro reflexo; albidā, ustulato-fusco tinctā et hic illic irregulariter longitudinaliter strigatā, labro albo, columellā et peritremate labri purpurascens-fuscis.*

THE BRUISED BULIMUS. Shell oblong-ovate, rather thick, most frequently sinistral, whorls seven in number, convex, smooth, lip reflected; whitish, stained and irregularly longitudinally streaked here

Javanus
(Lea)

and there with burnt brown, lip white, columella and outer edge of the lip purplish brown.

Hab. Eastern Islands.

This is unquestionably distinct from the *B. citrinus*, with which it has been hitherto confounded.

Species 221. (Mus. Cuming.)

BULIMUS CRASSILABRIS. *Bul. testā ovatā, cylindrā, umbilicatā, anfractibus septem, convexis, longitudinaliter creberrimè sulcato-striatis, columellā latā, aperturā parviusculā, rotundatā, labro simplici; albā, aurantio-fusco latè bifasciatā, versus apicem rosaceā.*

THE THICKENED-LIP BULIMUS. Shell ovate, cylindrical, umbilicated, whorls seven in number, convex, longitudinally very closely sulcately striated, columella broad, aperture rather small, rounded, lip simple; white, encircled by two broad bands of orange-brown, pink towards the apex.

GRAY, Pro. Zool. Soc. 1834. p. 66.

Hab. Madagascar.

The name assigned to this species is rather an inappropriate one, the lip being only slightly thickened and not reflected.

Species 222. (Mus. Cuming.)

BULIMUS PETITI. *Bul. testā conico-ovatā, glandiformi, umbilicatā, anfractibus sex, plano-convexis, longitu-*

dinaliter rugoso-striatis, suturā subtiliter crenulatis, columellā latiusculā, labro tenui, simplici; albidā, ustulato-fusco plus minusve tinctā.

PETIT'S BULIMUS. Shell conically ovate, acorn-shaped, umbilicated, whorls six in number, flatly convex, longitudinally roughly striated, finely crenulated at the suture, columella rather broad, lip thin, simple; whitish, more or less stained with burnt brown.

PFEIFFER, Pro. Zool. Soc. 1846, p. 31.

Hab. Chacopo, Bolivia.

Of rather light growth, crenulated at the suture in a manner extremely characteristic.

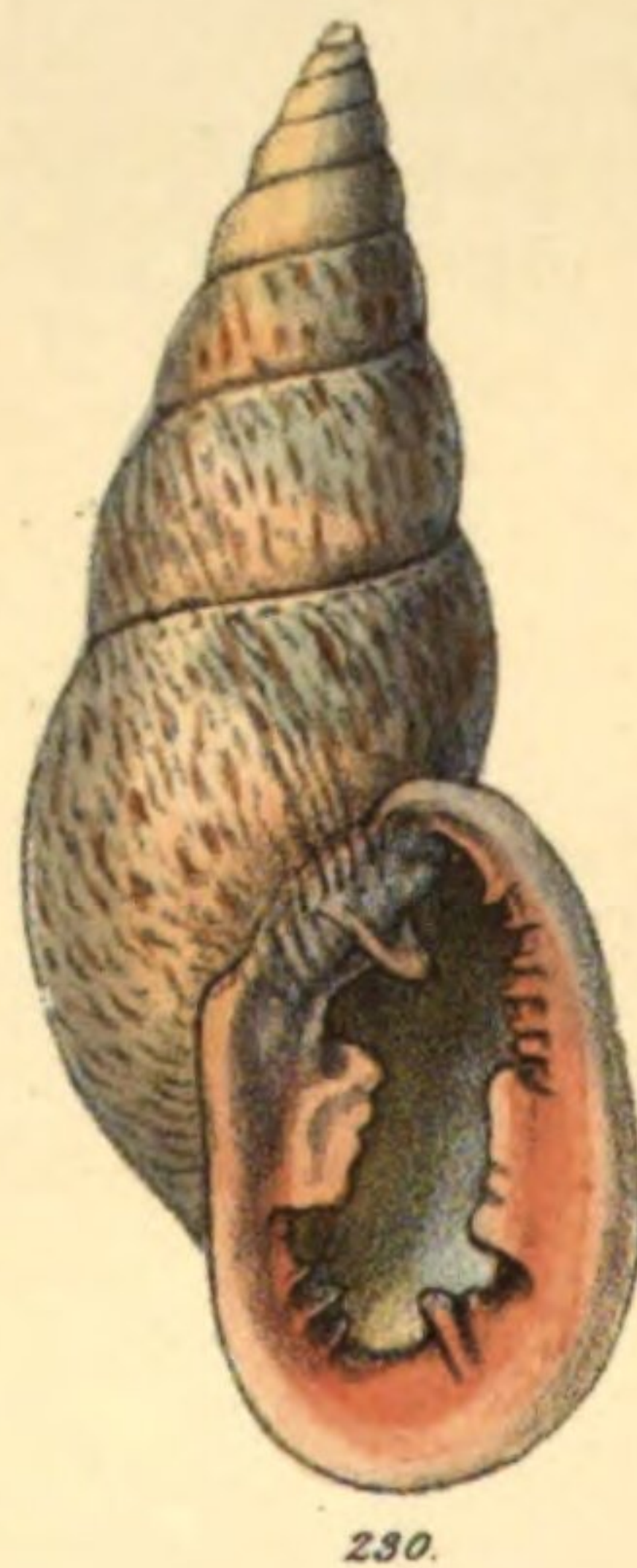
Species 223. (Mus. Cuming.)

BULIMUS CHLORIS. *Bul. testā cylindrā-oblongā, subfusiformi, sinistrali, anfractibus sex ad septem, convexis, lævibus aut longitudinaliter minutissimè striatis, columellā latā, subcallosā, aperturā parviusculā, labro reflexo; intensè citrino-flavā, columellā labroque albis.*

THE CANARY-BIRD BULIMUS. Shell cylindrically oblong, somewhat fusiform, sinistral, whorls six to seven in number, convex, smooth or longitudinally very minutely striated, columella broad, somewhat callous, aperture rather small, lip reflected; deep citron yellow, lip and columella white.

Hab. Eastern Islands.

Though approximating very closely in general aspect to the *B. citrinus*, I feel strongly convinced that this is a distinct species: the difference of form is permanent.



BULIMUS.

PLATE XXXVIII.

Species 224. (Mus. Cuming.)

BULIMUS SEX-DENTATUS. *Bul. testā cylindraceo-oblongā, Pupiformi, basi carinatā et umbilicatā; anfractibus octo, plano-convexis, longitudinaliter corrugato-striatis et sulcatis, ultimo pone labrum bicrobiculato, labro subexpanso, aperturā subquadrata, sex-dentatā; corneo-albidā, aperturæ fauce hic illic purpureo-fusco tinctā.*

THE SIX-TOOTHED BULIMUS. Shell cylindrically oblong, Pupa-shaped, keeled and umbilicated at the base; whorls eight in number, flatly convex, longitudinally striated and grooved in a wrinkled manner, last whorl with two indentations behind the lip, lip somewhat expanded, aperture rather square, six-toothed; horny white, interior of the aperture stained here and there with purple-brown.

Clausilia sex-dentata, Spix, Test. Bras., pl. 14. f. 3.

Pupa sex-dentata, Wagner.

Hab. Brazil.

Of a peculiarly cylindrical form, grooved and striated in a wrinkled manner much after the fashion of a Pupa.

Species 225. (Mus. Cuming.)

BULIMUS PUNCTULATISSIMUS. *Bul. testā cylindraceo-fusiformi, basi subcarinatā et umbilicatā, spiræ suturis subimpressis; anfractibus octo ad novem, transversim subtilissimè striatis et undique superficialiter indentatis, labro latè expanso, aperturā subcontractā, septem-dentatā; semipellucido-albā, opaco-albā ad suturas, aperturæ fauce purpureo-fuscā.*

THE FINELY PUNCTURED BULIMUS. Shell cylindrically fusiform, slightly keeled and umbilicated at the base, sutures of the spire somewhat impressed; whorls eight to nine in number, transversely very finely striated and everywhere superficially indented, lip broadly expanded, aperture somewhat contracted, seven-toothed; semitransparent white, opaque white at the sutures, interior of the aperture purple-brown.

Clausilia punctulatissima, Lesson, Voyage de la Coquille, pl. 15. f. 3.

Pupa septem-plicata, Rossmasler.

Hab. Brazil.

It is incorrect to say that this shell is punctured; the surface is covered with superficial indentations, and it is encircled throughout with very fine impressed striæ.

Species 226. (Mus. Cuming.)

BULIMUS JANEIRENSIS. *Bul. testā cylindraceo-fusiformi, umbilicatā, anfractibus octo ad novem, corneis, nitidulis, striis obliquis, elevatusculis, opaco-albis, fasciis longitu-*

dinalibus ornatis, columellā uni-plicatā; aperturā subquadrata, labro expanso, rosaceo.

THE JANEIRO BULIMUS. Shell cylindrically fusiform, umbilicated, whorls eight to nine in number, horny, shining, ornamented with oblique opaque white striæ and longitudinal waved bands, columella plaited; aperture somewhat square, lip expanded, pink.

SOWERBY, Conchological Illustrations, f. 97.

Hab. Janeiro, Brazil.

A pretty delicately coloured shell with merely a simple plait upon the columella.

Species 227. (Mus. Cuming.)

BULIMUS EXESUS. *Bul. testā oblongo-fusiformi, umbilicatā, anfractibus octo, subventricosis, peculiariter corrugatis et longitudinaliter indentatis; labro latissimè expanso, aperturā subquadrato-ovali, quadridentatā, dentibus laminatis; griseo-albicante, labro purpureo-rufescente.*

THE WORM-EATEN BULIMUS. Shell oblong-fusiform, umbilicated, whorls eight in number, somewhat ventricose, peculiarly wrinkled and longitudinally indented; lip very widely expanded, aperture somewhat squarely ovate, four-toothed, teeth laminated; greyish white, lip purple-red.

Clausilia exesa, Spix, Test. Bras., pl. 14. f. 1.

Pupa exesa, Wagner.

Pupa ringens, Jay.

Odontostoma exesum, Beck.

Hab. Brazil.

A fine species in which the surface is peculiarly longitudinally indented, the lip widely expanded, and richly coloured, and the teeth of the aperture prominent.

Species 228. (Mus. Cuming.)

BULIMUS ODONTOSTOMA. *Bul. testā cylindraceo-elongatā, basi bicarinatā et subampliter umbilicatā, anfractibus septem, convexis, obliquè creberrimè subtiliter striatis, striis elevatis, minutissimè granulatis; aperturā productā, septem-dentatā, marginibus conjunctis; cupreo-fuscā, aperturā rubente.*

THE TOOTHED-MOUTH BULIMUS. Shell cylindrically elongated, double-keeled and rather largely umbilicated at the base, whorls seven in number, convex, obliquely very closely finely striated, striæ raised, very minutely granulated; aperture produced, seven-toothed; coppery-brown, aperture reddish.

SOWERBY, Zool. Journ., vol. i. p. 59. pl. 5. f. 3.

Pupa odontostoma, Gray.

Cochlodina Gargantua, De Férussac.

October, 1848.

Clausilia Gargantua, Deshayes.

Pupa erythrostoma, Menke.

Odontostoma Gargantua, Beck.

Macrodonates Sowerbyi, Swainson.

Hab. Brazil,

Distinguished by its delicate coppery brown colour, which obtains a satiny hue from the striæ being granulated.

Species 229. (Mus. Cuming.)

BULIMUS GRAYANUS. *Bul. testâ cylindræo-elongatâ, lateraliter compressâ, subcontortâ, basi conspicuè carinatâ et umbilicatâ, anfractibus sex, striis spiralibus et obliquis undique decussatis, aperturâ valdè productâ, octo-dentatâ, marginibus conjunctis; fuscâ, aperturâ livido-purpurascente.*

GRAY'S BULIMUS. Shell cylindrically elongated, laterally compressed, somewhat twisted, conspicuously keeled and umbilicated at the base, whorls six in number, decussated throughout with spiral and oblique striæ, aperture very much produced, eight-toothed, margins joined; brown, aperture livid-purple.

PFEIFFER, Pro. Zool. Soc., 1845. p. 73.

Hab. Brazil.

This species has very much the appearance of being a distorted example of the preceding; it may prove distinct.

Species 230. (Mus. Cuming.)

BULIMUS PANTAGRUELINUS. *Bul. testâ cylindræo-oblongâ, umbilicatâ, anfractibus novem, subventricosis, longitudinaliter peculiariter corrugatâ et indentatâ; aperturâ subproductâ, labro latissimè incrassato et expanso, intus profusè lamello-dentato; cærulescente-albâ, labro carneo-aurantio.*

PANTAGRUEL'S BULIMUS. Shell cylindrically oblong, umbilicated, whorls nine in number, somewhat ventricose, longitudinally peculiarly wrinkled and indented; aperture rather produced, lip very widely thickened and expanded, profusely lamellarly toothed; bluish-white, lip flesh-tinted orange.

Cochlodina Pantagruelina, Moricand, Mém. Genève, vol. vi. p. 542. pl. 1. f. 7. 8.

Odontostoma Pantagruelinum, Beck.

Odontostoma leucotrema, Beck.

Hab. Brazil.

The largest species of this curious Brazilian group, distinguished by the bold reflection of the lip and singular development of teeth.

Species 231. (Mus. Cuming.)

BULIMUS PUPOIDES. *Bul. testâ cylindræo-oblongâ, umbilicatâ, viz carinatâ, anfractibus novem, plano-convexis, obliquè tenuissimè striatis; aperturâ subproductâ, quadrato-oblongâ, quadri- vel quinque-dentatâ, supernè bicanaliculatâ, labro incrassato, expanso; corneo-albidâ, strigis castaneis perpaucis obliquè pictâ.*

THE PUPA-LIKE BULIMUS. Shell cylindrically oblong, umbilicated, scarcely keeled, whorls nine in number, flatly convex, obliquely very finely striated; aperture somewhat produced, squarely oblong, four- or five-toothed, with two narrow channels at the upper part, lip thickened, expanded; horny white, obliquely painted with a very few chesnut-brown stripes.

Clausilia Pupoides, Spix, Test. Bras., pl. 14. f. 4.

Pupa inflata, Wagner.

Pupa fasciata, Potiez et Michaud.

Cochlodonta Listeri, De Férussac.

Pupa Listeri, Gray.

Cyclodontina Pupoides and *Listeri*, Beck.

Bulimus vitreus, Spix.

Hab. Brazil.

A solid shell with a somewhat transparent aspect,

Species 232. (Mus. Cuming.)

BULIMUS WAGNERI. *Bul. testâ cylindræo-pyramidalî, umbilicatâ, anfractibus undecem, tenuissimè rugoso-striatis, suturis subrudibus; aperturâ quadridentatâ, labro simplici; corneo-albidâ, opaco-albo maculatâ et flammâtâ.*

WAGNER'S BULIMUS. Shell cylindrically pyramidal, umbilicated, whorls eleven in number, very finely roughly striated, sutures somewhat rude, aperture four-toothed, lip simple; horny white, spotted and flamed with opaque white.

PFEIFFER, Monog. Hel. viv., vol. ii. p. 85.

Clausilia striata, Spix.

Pupa striata, Wagner.

Pupa turrita, Anton.

Pupa conspersa, Potiez and Michaud.

Pupa Spixii, D'Orbigny.

Cyclodontia striata, Beck.

Hab. Brazil.

I quote the *Clausilia striata*, Spix, (*Pupa Spixii*, D'Orbigny,) as synonymous with this species on the authority of Dr. Pfeiffer, but with some doubt, for D'Orbigny describes it as having the lip thickened and reflected.

Species 233. (Mus. Cuming.)

BULIMUS DENTATUS. *Bul. testâ subobeso-cylindræâ, umbilicatâ, anfractibus septem, convexis, obliquè exiliter striatâ, aperturâ densè sex-dentatâ, labro producto, viz reflexo; albidâ.*

THE TOOTHED BULIMUS. Shell somewhat stoutly cylindrical, umbilicated, whorls seven in number, convex, obliquely faintly striated, aperture thickly six-toothed, lip produced, scarcely reflected; whitish.

KING, Zool. Journal, vol. v. p. 340.

Hab. Brazil.

It is only to be presumed that this is the true *B. dentatus* of King.



235.



234.



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243.

BULIMUS.

PLATE XXXIX.

Species 234. (Mus. Cuming.)

BULIMUS GRANADENSIS. *Bul. testā subfusiformi-ovatā, tenui, vix umbilicatā, anfractibus sex, ventricosus, irregulariter striatis; aperturā ovali, labro tenuissimo, acuto; cæruleo-albicante, luteo-aurantio tinctā, maculis oblongis irregularibus seriatim ornatā.*

THE GRANADA BULIMUS. Shell somewhat fusiformly ovate, thin, scarcely umbilicated, whorls six in number, ventricose, irregularly striated; aperture oval, lip very thin, acute; bluish white, stained with yellowish orange, and ornamented with rows of irregular oblong blue-black spots.

PFEIFFER, Pro. Zool. Soc., 1847, p. 231.

Hab. Merida, New Granada; Funck.

This specimen described by Dr. Pfeiffer is apparently of immature growth, though it exhibits all the characters of a distinct species.

Species 235. (Mus. Cuming.)

BULIMUS BADIUS. *Bul. testā ovatā, ventricosā, vix umbilicatā, anfractibus sex, ventricosus, rugoso-striatis, ad suturas tenui-crenulatis; columellā revolutā, aperturā ovatā, labro tenui; fulvescente-badiā fusco fasciatis, fasciis interruptis.*

THE BAY BULIMUS. Shell ovate, ventricose, scarcely umbilicated, whorls six in number, ventricose, roughly striated, finely crenulated at the sutures; columella rolled back, aperture ovate, lip thin; light fulvous bay, encircled with interrupted brown bands.

SOWERBY, Pro. Zool. Soc., 1834, p. 141.

Hab. Province of Xagua, Peru; Matthews.

There is a considerable resemblance in the colouring of this species to that of the *B. thamnoicus*.

Species 236. (Mus. Cuming.)

BULIMUS PAPYRACEUS. *Bul. testā fusiformi-ovatā, tenui, vix umbilicatā, anfractibus sex, subventricosus, longitudinaliter subtilissimè plicato-striatis; columellā revolutā, aperturā ovali, labro subexpanso, tenui, acuto; albā, cæruleo-nigricante undato-nebulatā, striis opaco-albis.*

THE PAPER BULIMUS. Shell fusiformly ovate, thin, scarcely umbilicated, whorls six in number, somewhat ventricose, longitudinally very finely plicately striated; columella rolled back, aperture oval, lip somewhat expanded, thin, sharp; white, clouded in a waved manner with blue-black.

Helix papyracea, Mawe.

Cochlogena lita, De Férussac.

Bulimus litturatus, Spix.

Bulimus lita, Deshayes.

Bulimus inflatus, Spix.

Bulimus magus, Wagner.

Hab. Brazil.

The shell named *B. magus* and *inflatus*, as above recorded, is another state of the species of larger size.

Species 237. (Mus. Cuming.)

BULIMUS TRI-FASCIATUS. *Bul. testā subpyramidal-ovatā, solidulā, umbilicatā, anfractibus sex, lævibus aut obsolete striatis, aperturā suborbiculari, labro conspicuè reflexo; albidā, rufo-fusco basin versus fasciatā, apicem versus cinereo punctulatā, labro albo.*

THE THREE-BANDED BULIMUS. Shell somewhat pyramidally ovate, rather solid, umbilicated, whorls six in number, smooth or obsoletely striated, aperture rather orbicular, lip conspicuously reflected; whitish, banded with reddish brown towards the base, finely dotted with ash colour towards the apex, lip white.

Helix trifasciata, Chemnitz, vol. ix. p. 155. pl. 134. f. 1215.

Cochlogena trizonalis, De Férussac.

Bulimus zonatus, Swainson.

Hab. Ceylon; Gardner.

The shell here represented agrees much better with Mr. Swainson's figure, *B. zonatus*, Zool. Illus., pl. 17, than with Chemnitz's above quoted. I believe, however, with Dr. Pfeiffer, they are varieties of the same species.

Species 238. (Mus. Cuming.)

BULIMUS MULTICOLOR. *Bul. testā conico-ovatā, subobliquè convolutā, umbilicatā, anfractibus quinque, sub lente minutissimè granulatis, ultimo ventricosus; aperturā subobliquè oblongā, labro tenuiculo, vix reflexo; opaco-albā, olivaceo tinctā, flammis purpureo-fuscis variegatā, aperturæ fauce violascente, labro vividè roseo.*

THE MANY-COLOURED BULIMUS. Shell conically ovate, somewhat obliquely convoluted, umbilicated, whorls five in number, very minutely granulated under the lens, last whorl ventricose; aperture rather obliquely oblong, lip rather thin but slightly reflected; opaque white, olive-stained, variegated with purple-brown flames, interior of the aperture violet, lip bright rose.

Helix multicolor, Rang, Annales des Sci. Nat., 1831, p. 55. pl. 3. f. 1.

Gonyostoma multicolor, Beck.
Hab. Brazil.

The last whorl of this pretty species is distinguished by a peculiar swollen oblique growth.

Species 239. (Mus. Cuming.)

BULIMUS MIERSII. *Bul. testâ fusiformi-oblongâ, latè umbilicatâ, spirâ acuminatâ, anfractibus sex, lævibus, sub lente seriatim minutissimè punctulatis; aperturâ oblongo-ovali, labro conspicuè reflexo; pallidè castaneâ, opaco albo variegatâ, intus purpureo-violascente, labro vividè roseo.*

MIERS' BULIMUS. Shell fusiformly oblong, broadly umbilicated, spire acuminate, whorls six in number, smooth, very minutely punctured in rows beneath the lens; aperture oblong-oval, lip conspicuously reflected; light chesnut, variegated with opaque white, interior tinged with purple-white, lip bright rose.

SOWERBY, Conch. Illus., f. 90.

Hab. Brazil.

Dr. Pfeiffer errs greatly in regarding this as a variety of the preceding species; it has certainly a general resemblance to it, but, as an attentive comparison of the foregoing descriptions will show, it is specifically distinct throughout.

Species 240. (Mus. Cuming.)

BULIMUS CRICHTONI. *Bul. testâ subfusiformi, crassiusculâ, anfractibus sex ad septem, longitudinaliter creberrimè rudè plicato-liratis; columellâ callosâ, basi retrorsum contortâ, aperturâ oblongâ, basi canaliculatâ, labro incrassato, expanso, vix reflexo; flavicante-albâ, fusco prope apicem exiliter flammâtâ, olivaceo-viridi inter liras fasciatâ et irregulariter tinctâ, columellâ vividè purpureo-rosâ.*

CRICHTON'S BULIMUS. Shell somewhat fusiform, rather thick, whorls six to seven in number, longitudinally very closely rudely plicately ridged; columella callous, twisted backwards at the base, aperture oblong, channelled at the base, lip thickened, expanded, scarcely reflected; yellowish white, faintly flamed with brown near the apex, banded and irregularly stained with olive-green between the ridges, columella deep purple-rose.

BRODERIP, Pro. Zool. Soc., 1836, p. 44.

Hab. Ambo, near Huanuco, Peru; Sir Alexander Crichton.

The channel of the base of this remarkable species, of which this is, I believe, the only specimen known, is thought by Mr. Broderip to be a distortion.

Species 241. (Mus. Cuming.)

BULIMUS FULVICANS. *Bul. testâ conico-ovatâ, tenui, um-*

bilicatâ, anfractibus sex ad septem, subrotundatis, creberrimè spiraliter elevato-striatis, striis aliis minutis obliquè decussatis; columellâ plano-revolutâ, labro simplici, acuto; undique rufescente-fulvâ.

THE FULVOUS BULIMUS. Shell conically ovate, thin, umbilicated, whorls six to seven in number, somewhat rounded, very closely spirally elevately striated, obliquely crossed with other minute striæ; columella flatly rolled back, lip simple, sharp; reddish fulvous throughout.

PFEIFFER, Monog. Hel. viv., vol. 2. p. 99.

Hab. Seychelle Islands.

Of a uniform reddish fulvous colour, closely spirally striated in a very characteristic manner.

Species 242. (Mus. Cuming.)

BULIMUS JUSSIEUI. *Bul. testâ oblongo-ovatâ, tenuiculâ, vix umbilicatâ, anfractibus sex, longitudinaliter rudè striatis, transversim sub lente obscurè seriatim punctulatis; columellâ revolutâ, labro simplici, acuto; corneo-fuscâ, hic illic saturatius strigatâ.*

JUSSIEU'S BULIMUS. Shell oblong-ovate, rather thin, scarcely umbilicated, whorls six in number, longitudinally rudely striated, transversely obscurely finely punctured under the lens in rows; columella rolled back, lip simple, sharp, flesh-tinted brown, streaked here and there of a darker colour.

VALENCIENNES, MSS. Pfeiffer, Pro. Zool. Soc., 1846, p. 33.

Hab. Cusoo.

Resembling *B. granulosus* somewhat in general aspect.

Species 243. (Mus. Cuming.)

BULIMUS MELO. *Bul. testâ ovatâ, tenuiculâ subventricosâ, vix umbilicatâ, anfractibus sex, longitudinaliter rudè striatis, ad suturas subplicatis; columellâ revolutâ, labro simplici, tenui; intus extusque nigricante-purpureâ, extus fulvo longitudinaliter variè flammâtâ et striatâ.*

THE MELON BULIMUS. Shell ovate, rather thin, ventricose, scarcely umbilicated, whorls six in number, longitudinally rudely striated, slightly plicated at the sutures; columella rolled back, lip simple, thin; blackish-purple within and without, variously longitudinally flamed and striated without with fulvous colour.

QUOY and GAIMARD, Voy. de l'Astrol. Zool., vol. ii. p. iii. pl. 9. f. 8, 9.

Hab. New Holland.

Varied externally with dark brown and yellowish flames, and tinged with rich purple brown in the interior.

pulcherrimus
 (Pfeiffer)



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250



251



252



253

G. B. S. del et lith.

R. B. & R. imp.

BULIMUS.

PLATE XL.

Species 244. (Mus. Cuming.)

BULIMUS MEXICANUS. *Bul. testâ acuminato-ovatâ, tenui, vix umbilicatâ, anfractibus sex ad septem, longitudinaliter tenuistriatis; columellâ reflexâ, labro tenui, simplici; albidâ, nigricante-fusco tri-quadri-zonatâ.*

THE MEXICAN BULIMUS. Shell acuminate ovate, thin, but slightly umbilicated, whorls six to seven in number, longitudinally finely striated; columella reflected, lip thin, simple; whitish, encircled by three or four zones of blackish brown.

LAMARCK, Anim. sans vert., (Deshayes' edit.) vol. viii. p. 232.

Cochlogena vittata, De Férussac.

Hab. Mexico.

Approximating in general aspect to the *B. Caribæorum* of the West Indies.

Species 245. (Mus. Cuming.)

BULIMUS LUCIDUS. *Bul. testâ oblongo-ovatâ, tenui, corneâ, pellucidâ, vix umbilicatâ, anfractibus sex, convexis, lævibus, nitentibus, sub lente creberrimè spiraliter impresso-striatis; columellâ reflexâ, labro simplici, acuto; pallidè stramineâ.*

THE CLEAR BULIMUS. Shell oblong ovate, thin, horny, transparent, scarcely umbilicated, whorls six in number, convex, smooth, shining, very closely spirally impressly striated.

Hab. St. Vincents, Guilding.

This shell has the name *fragilis* attached to it in Mr. Cuming's collection, but it is not the *B. fragilis* of Lamarck, which, according to M. Deshayes, is the young of the British *Lymnea stagnalis*.

Species 246. (Mus. Cuming.)

BULIMUS VIMINEUS. *Bul. subpyramidalis-ovatâ, basi sub-obliquè productâ, vix umbilicatâ, anfractibus septem, convexis, glabris; columellâ reflexâ, aperturâ obliquè angulatâ-effusâ, labro subexpanso, non reflexo; albâ, luteo et cinereo-cærulescente conspicuè longitudinaliter vittatâ, aperturæ fauce castaneo-fuscâ, labro albo.*

THE WICKER BULIMUS. Shell somewhat pyramidally ovate, obliquely produced at the base, scarcely umbilicated, whorls seven in number, convex, smooth,

columella reflected, aperture obliquely angularly effused, lip somewhat expanded, not reflected; white, conspicuously longitudinally filleted with stripes of ashy blue and yellow, interior of the aperture chesnut-brown, lip white.

Helix viminea, Moricand, Mém. de Genève, vol. vi. p. 540. pl. 1. f. 5.

Hab. Brazil.

A very characteristic species both in respect of form and colouring.

Species 247. (Mus. Cuming.)

BULIMUS UNDULATUS. *Bul. testâ subfusiformi-ovatâ, umbilicatâ, anfractibus sex ad septem, convexiusculis, glabris, ultimo basi obtusè angulatis; columellâ reflexâ, aperturâ oblongo-ovali, labro acuto, vix reflexo; albidâ, luteo et livido-brunneo conspicuè undulatâ.*

THE WAVED BULIMUS. Shell somewhat fusiformly ovate, umbilicated, whorls six to seven in number, rather convex, smooth, last whorl obtusely angled at the base; columella reflected, aperture oblong-oval, lip sharp, but slightly reflected; whitish, conspicuously waved with yellow and livid brown.

Bulimulus undulatus, Guilding, Zool. Journ., vol. iv. p. 169.

Hab. St. Vincents, West Indies.

A prettily striped species described some years since by the Rev. Lansdowne Guilding, but still rare.

Species 248. (Mus. Cuming.)

BULIMUS ANGULATUS. *Bul. testâ ovato-fusiformi, umbilicatâ, basi attenuatâ, anfractibus octo, convexis, lævibus; columellâ latè reflexâ, aperturâ infernè canaliculatâ, labro subexpanso, non reflexo; cærulescente-albâ, strigis fuscis longitudinalibus hic illic irregulariter pictâ, strigâ saturatiore pone labrum, labro albo, apice nigro.*

THE ANGLED BULIMUS. Shell ovately fusiform, umbilicated, attenuated at the base, whorls eight in number, convex, smooth; columella broadly reflected, aperture channelled at the lower part, lip somewhat expanded, not reflected; bluish-white, painted irregularly here and there with brown streaks, with a darker streak behind the lip, lip white, apex black.

WAGNER, Spix, Test. Bras., p. 14. pl. 13. f. 3.

Hab. Brazil.

October, 1848.

Distinguished by the aperture being attenuately prolonged at the base, so as to form a channel.

Species 249. (Mus. Cuming.)

BULIMUS FUSIFORMIS. *Bul. testā elongato-fusiformi, umbilicatā, basi attenuatā, compressā et retrorsum subcon-tortā, anfractibus novem ad decem, plano-convexis, longitudinaliter obscure striatis; columellā latē reflexā, aperturā subelongatā, basi latē canaliculatā, labro expanso non reflexo; fuscescente, strigis fuscis longitudinalibus hic illic irregulariter pictā, strigā saturatiore pone labrum.*

THE FUSIFORM BULIMUS. Shell elongately fusiform, umbilicated, attenuated at the base, compressed and slightly twisted backwards, whorls nine to ten in number, flatly convex, longitudinally obscurely striated; columella broadly reflected, aperture somewhat elongated, broadly channelled at the lower part, lip expanded, not reflected; pale brown, painted irregularly here and there with brown streaks, with a darker streak behind the lip.

Helix fusiformis, Rang, Ann. des Sci. Nat., p. 60. pl. 3. f. 2.
Bulimus dubiosus, Jay.

Bulimus angulatus, var? Deshayes.

Hab. Brazil

There is a remarkable affinity between this and the preceding species, which is not shared by any other; they are nevertheless permanently distinct.

Species 250. (Mus. Cuming.)

BULIMUS DESHAYESII. *Bul. testā elongato-turritā, umbilicatā, anfractibus novem, rotundatis, subtiliter impresso-striatis, ad suturas obscure crenulatis, columellā reflexā, aperturā parvā, simplici; violascente-albā, maculis strigisque viridi-fuscis irregulariter pictā, aperturæ fauce roseo-purpureā.*

DESHAYES' BULIMUS. Shell elongately turreted, umbilicated, whorls nine in number, rounded, finely impressly striated, obscurely crenulated at the sutures, columella reflected, aperture small, simple; violettinged white, irregularly painted with greenish-brown streaks and blotches, interior of the aperture rose-purple.

PFEIFFER, Pro. Zool. Soc., 1845, p. 73.

Hab. Venezuela; Dyson.

Quite unlike any other species at present known.

Species 251. (Mus. Cuming.)

BULIMUS LOXENSIS. *Bul. testā cylindraceo-oblongā, um-*

bilicatā, anfractibus septem, convexis, lævibus, aut obscure striatis; columellā latē reflexā, aperturā parviusculā, labro simplici, acuto; cærulescente-albā, nigricante-castaneo hic illic longitudinaliter maculatā aut strigatā.

THE LOXA BULIMUS. Shell cylindrically oblong, umbilicated, whorls seven in number, convex, smooth, or obscurely striated; columella broadly reflected, aperture rather small, lip simple, sharp; bluish-white, here and there longitudinally streaked and blotched with blackish chesnut.

PFEIFFER, MSS., Mus. Cuming.

Hab. El Catamajja, Loxa, Quito; Hartweg.

Of a peculiarly bluish-white, painted in a very irregular manner with dark more or less interrupted streaks.

Species 252. (Mus. Cuming.)

BULIMUS SERPERASTRUS. *Bul. testā conico-oblongā, umbilicatā, anfractibus septem, convexiusculis, lævibus; columellā reflexā, labro subexpanso, vix reflexo; albidā, fasciis ad sex cæruleo-fuscis irregularibus, interruptis, cingulatā.*

THE BANDAGED BULIMUS. Shell conically oblong, umbilicated, whorls seven in number, slightly convex, smooth; columella reflected, lip somewhat expanded, scarcely reflected; whitish, encircled with about six irregular interrupted bluish-brown bands.

SAY, Descr. New Terr. Shells, p. 25.

Hab. Mexico.

Banded in a particular manner, whilst the species is also peculiar in form.

Species 253. (Mus. Cuming.)

BULIMUS DURUS. *Bul. testā subgloboso-ovatā, umbilicatā, anfractibus septem, rotundatis, striis longitudinalibus et transversis subtilissimè decussatā; columellā reflexā, labro simplici, vix reflexo; fulvicante, medio albizonatā.*

THE HARD BULIMUS. Shell somewhat globosely ovate, umbilicated, whorls seven in number, rounded, very finely decussated with longitudinal and transverse striæ; columella reflected, lip simple, scarcely reflected; pale fulvous colour with a white zone round the middle.

SPIX, Test. Bras., p. 5. pl. 6. f. 2.

Hab. Brazil.

Very closely allied in form to dwarf specimens of *B. heterotrichus*.



254.



255.



256.



257.



258. a



258. b.



259. a.



260.



259. b.



261.

BULIMUS.

PLATE XLI.

Species 254. (Mus. Dennison.)

BULIMUS SUBSEMICLAUSUS. *Bul. testâ subabbreviato-ovatâ, tenuiculâ, ventricosâ, anfractibus quinque, lævibus, vel sub lente minutissimè impresso-striatis, anfractu ultimo, subangulato; columellâ depressâ, labro peculiariter plano-reflexo; lacteo-albidâ, obscurè fusco-cingulatâ, punctis opaco-albis fusco-umbratis notatâ, castaneâ circa columellam.*

THE PARTIALLY-CLOSED BULIMUS. Shell somewhat abbreviately ovate, rather thin, ventricose, whorls five in number, smooth or very minutely impressly striated under the lens, last whorl slightly angulated; columella depressed, lip peculiarly flatly turned inwards; yellowish-white, obscurely belted with brown, marked with brown-shaded opaque white dots, chesnut around the columella.

PETIT, Magasin de Zoologie, 1843, Moll. pl. 66.

Hab. Santa Fé di Bogota.

This singular species may at once be recognised by the curious inwardly reflected growth of the lip.

Species 255. (Mus. Cuming.)

BULIMUS MARMARINUS. *Bul. testâ subcylindraco-oblongâ, umbilicatâ, anfractibus sex ad septem, concentricè subrudè striatis; columellâ subplicatâ et latè plano-reflexâ, labro vix reflexo; albidâ, castaneo fasciatim maculatâ et longitudinaliter undatâ.*

THE MARBLED BULIMUS. Shell somewhat cylindrically oblong, umbilicated, whorls six to seven in number, concentrically somewhat rudely striated; columella slightly plaited, and broadly flatly reflected, lip scarcely reflected; whitish, spotted in a banded manner and longitudinally waved with chesnut.

D'ORBIGNY, Voy. dans l'Amér. Mèrid., p. 310. pl. 39. f. 11, 12.

Hab. Yungas, Bolivia (under dead leaves and stones in woods near the river Meguilla); D'Orbigny.

Characterized by a waved pattern in the painting as well as by a peculiar roundness of form.

Species 256. (Mus. Cuming.)

BULIMUS CANALICULATUS. *Bul. testâ subfusiformi-ovatâ, basi peculiariter compresso-carinatâ et umbili-*

catâ, anfractibus sex ad septem, convexis, longitudinaliter rugoso-striatis; columellâ reflexâ, aperturâ oblongâ, infernè conspicuè canaliculatâ; albidâ, purpurascence-spadiceo strigatâ et marmoratâ, intus purpurascence.

THE CHANNELLED BULIMUS. Shell somewhat fusiformly ovate, peculiarly compressly keeled and umbilicated at the base, whorls six to seven in number, convex, longitudinally roughly striated; columella reflected, aperture oblong, conspicuously channelled at the lower part; whitish, streaked and marbled with purplish bay, interior purplish.

PFEIFFER, Pro. Zool. Soc., 1845. p. 68.

Hab. New Granada.

Chiefly remarkable on account of its abruptly contracted growth at the base, which looks pushed inwards as it were.

Species 257. (Mus. Adamson.)

BULIMUS LYONNETIANUS. *Bul. testâ pyramidal-conicâ, basi latissimè et abruptè angulatâ, profundè umbilicatâ, anfractibus octo, longitudinaliter rugoso-striatis, striis apicem versus elevatioribus et regularibus, anfractu ultimo sinistrorsum gibboso-producto; aperturâ ovatâ, labro reflexo; albidâ, epidermide flavicante indutâ.*

LYONNET'S BULIMUS. Shell pyramidally conical, very broadly and abruptly angled at the base, deeply umbilicated, whorls eight in number, longitudinally roughly striated, striæ more elevated and regular towards the apex, last whorl gibbously produced on the left side; aperture ovate, lip reflected; whitish, covered with a yellowish epidermis.

Helix Lyonnetiana, Pallas, Spicilegia Zoologica, vol. x. pl. 3. f. 7, 8.

Trochus Lyonnetianus, Chemnitz.

Trochus distortus, Gmelin.

Helix distorta, Burrows.

Pupa modiolinus, Bowditch.

Hab. Mauritius.

This remarkable species, which partakes very much of the character of certain *Pupæ*, was originally named by Pallas, in honour of M. Lyonnet, an eminent anatomist and anatomical engraver of the last century, resident at the Hague.

Species 258. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS NAVICULA. *Bul. testā abbreviato-conicā, basi peculiariter plano-truncatā, subobscure umbilicatā, anfractibus sex, subtiliter striatis et corrugato-malleatis, ultimo dextrorsum valdè producto; aperturā infernè canaliculatā, labro subreflexo; albidā, cæruleo-fusco marmoratā, sæpè intense roseo-castaneo latifasciatā, labro eburneo.*

THE LITTLE BARK BULIMUS. Shell abbreviately conical, peculiarly flatly truncated at the base, somewhat obscurely umbilicated, whorls six in number, finely striated and indentated in a wrinkled manner, last whorl much produced towards the right; aperture channelled at the lower part, lip slightly reflected; whitish, marbled with bluish brown, often broadly banded with deep rose-chestnut, lip ivory white.

HELIX NAVICULA, Wagner, Spix, Test. Bras., pl. 15. f. 2, 3.

Bulimus auris-leporis, Férussac.

Bulimus lateralis, Menke.

Otostoma navicula, Beck.

Hab. Bahia, Brazil; Spix, Moricand.

Amplly distinguished by its extraordinary mode of growth, of which an approximation is offered in the species which follows.

Species 259. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS AURIS-LEPORIS. *Bul. testā subpyramidalis-ovatā, basi depresso-convexā, umbilicatā, anfractibus sex, subtiliter striatis et corrugato-malleatis, anfractu ultimo dextrorsum subproducto, aperturā descendente, labro expanso, vix reflexo; albā, nigro vel fusco marmoratā aut strigatā, infernè unifasciatā, labro eburneo.*

THE HARE'S-EAR BULIMUS. Shell somewhat pyramidally ovate, depressly convex, umbilicated, whorls six in number, finely striated and indentated in a wrinkled manner, last whorl slightly produced towards the right, with the aperture descending, lip expanded, scarcely reflected; white, marbled or streaked with black or brown, with a single band round the lower part, lip ivory white.

BRUGUIERE, Enc. Méth., vol. i. p. 346.

Auricula leporis, Lamarck.

Cochlogena auris-leporis, Férussac.

Pupa auris-leporis, Gray.

Bulimus lagotis, Menke.

Otostoma lagotis, Beck.

Hab. Brazil.

The plan of growth and detail of sculpture are the same

as in the *B. navicula*, in which species they may be said to be fancifully exaggerated.

Species 260. (Mus. Cuming.)

BULIMUS COARCTATUS. *Bul. testā conico-ovatā, solidulā, umbilicatā, anfractibus sex ad septem, lævibus, aut sub lente subtiliter decussatim striatis; columellā incrasatā, reflexā, aperturā coarctatā, labro planè expanso, latiusculo; albā, supernè lineis interruptis, infernè fasciis, fusco-nigricantibus cingulatā, apice nigro, labro eburneo.*

THE CONTRACTED BULIMUS. Shell conically ovate, rather solid, umbilicated, whorls six to seven in number, smooth under the lens, finely decussately striated; columella thickened, reflected, aperture contracted, lip flatly expanded, rather broad; white, encircled round the upper part with brown-black interrupted lines, round the lower with bands, lip ivory white.

PFEIFFER, Pro. Zool. Soc., 1845, p. 73.

Hab. —?

Somewhat *Partula*-like in aspect, though not possessing the characters of that genus.

Species 261. (Mus. Cuming.)

BULIMUS AURIS-MURIS. *Bul. testā conico-ovatā, basi depresso-planā, subobscure umbilicatā, anfractibus sex ad septem, planiusculis, lævibus, sub lente subtiliter malleatis; columellā latè reflexā, aperturā lateraliter plano-contortā, subtrigonā, labro reflexo; albā, lineis cæruleo-nigricantibus cingulatā, labeculis pallidioribus obliquis.*

THE MOUSE'S-EAR BULIMUS. Shell conically ovate, depressly flattened at the base, somewhat obscurely umbilicated, whorls six to seven in number, rather flattened, smooth, finely indented under the lens; columella broadly reflected, aperture flatly contracted at the side, somewhat triangular, lip reflected; white, encircled by narrow bluish-black bands, and oblique dashes of a lighter hue.

Helix auris-muris, Moricand, Mém. de Genève, vol. viii. p. 140. pl. 3. f. 1-3.

Otostoma myotis, Beck.

Hab. Bahia, Brazil.

Although partaking of the form and minute detail of sculpture presented in the *B. navicula* and *auris-leporis*, this is a very distinct and characteristic species.



262.



263. b.



263. a.



264.



265. f.



265. a.



265. c.



267.



266.



268.

BULIMUS.

PLATE XLII.

Species 262. (Mus. Cuming.)

BULIMUS VERANYI. *Bul. testā conico-globosā, spirā brevi, anfractibus quatuor ad quinque, ventricosus, creberrimè minutè granulatis; columellā subplicatā, labro reflexo; fulvā, fusco subindistinctè punctatā, strigis albidis fulguratā, epidermide tenui indutā, labro corneo-albido.*

VERANY'S BULIMUS. Shell conically globose, spire short, whorls four to five in number, ventricose, very closely minutely granulated; columella slightly plaited, lip reflected; yellowish, somewhat indistinctly dotted with brown, marked with white lightning-like streaks, and covered with a thin epidermis, lip flesh-tinted white.

PFEIFFER, Pro. Zool. Soc., 1847, p. 230.

Hab. Chacopo, Province of Merida, New Granada.

In some specimens the white zigzag streaks are not present.

Species 263. (Mus. Cuming.)

BULIMUS QUADRICOLOR. *Bul. testā tenui, sub-depresso-ovatā, Succineaformi, spirā brevi, anfractibus quatuor, obliquè elevato-striatis; columellā tortuosā, aperturā amplā, labro tenuiter reflexo; pellucido-corneā, luteā, fusco nunc undulatā, nunc punctatā, epidermide tenui luteo-punctatā indutā, epidermide sericeā secundā in strigis longitudinalibus antrorsum peculiariter serratis, labro purpureo-roseo.*

THE FOUR-COLOURED BULIMUS. Shell somewhat depressly ovate, Succinea-shaped, spire short, whorls four in number, obliquely elevately striated; columella twisted, aperture large, lip thinly reflected; transparent-horny, yellow, sometimes waved, sometimes dotted with brown, covered with a thin yellow-dotted epidermis, with a second light silken epidermis in longitudinal streaks peculiarly serrated along the anterior edge, lip purple-rose.

PFEIFFER, Pro. Zool. Soc., 1847, p. 229.

Hab. Chacopo, Province of Merida, New Granada.

A delicate and beautiful species collected in the same locality with the preceding by M M. Funck and Linden.

Species 264. (Mus. Cuming.)

BULIMUS SUCCINOIDES. *Bul. testā depresso-ovatā, Suc-*

cineaformi, spirā brevissimā, anfractibus quatuor, obliquè striatis et creberrimè minutè granulatis; columellā tortuosā, aperturā peramplā, labro reflexo; sub-corneā, lutescente, fasciā suturali castaneā, epidermide olivaceo-fuscā indutā, epidermide secundā sericeā in strigis brevibus obliquis e suturis descendentes, labro albido.

THE SUCCINEA-LIKE BULIMUS. Shell depressly ovate, Succinea-shaped, spire very short, whorls four in number, obliquely striated and very closely minutely granulated; columella tortuous, aperture very large, lip reflected; somewhat horny, yellowish, with a dark chesnut sutural band, covered with an olive brown epidermis, and a second silken one descending from the sutures in short oblique streaks, lip whitish,

PETIT, Magasin de Zoologie, 1841, Moll. pl. 31.

Hab. Santa Fé di Bogota.

The form of this species, contrasted with that of *B. Lyonnetianus* and *navicula*, is remarkable.

Species 265. (Fig. a and b, Mus. Sowerby; Fig. c, Mus. Cuming.)

BULIMUS CATHCARTIÆ. *Bul. testā ovatā, ventricosā, spirā brevi, anfractibus quinque, obliquè subtilissimè striatis, anfractu ultimo maximo, aperturā patulā, labro sublatè reflexo; albidā vel purpurascēte-castaneā, epidermide luteo-olivaceā indutā, epidermide sericeā secundā, plus minusve pulcherrimè et variè configuratā, intus purpurascēte-castaneā, labro roseo.*

CATHCART'S BULIMUS. Shell ovate, ventricose, spire short, whorls five in number, obliquely very finely striated, last whorl very large, aperture wide open, lip somewhat broadly reflected; whitish, or purplish chesnut, covered with a yellowish-olive epidermis, and a second silken one which is more or less beautifully and variously configured, interior purple-chesnut, lip pink.

Hab. Province of Merida, New Granada; Linden.

In addition to the beautiful association of form and colour in this species, it is further distinguished by a remarkable configuration of the outer membrane of the epidermis, which is variously disposed in different specimens. The *B. Cathcartiæ* resembles in some degree the *B. pintadinus*, D'Orbigny, Moll. Voy. dans l'Amér. Mérid.

October, 1848.

of which the author informs us he collected a single dead specimen in a damp forest at the base of the Eastern Cordilleras of Bolivia, but possesses neither the form nor marking of that species.

I am indebted to Mr. Linden, the botanical traveller in New Granada, for the possession of several examples of this chaste and beautiful shell, characterized by different patterns of epidermis, and have thought it a subject not unworthy of being dedicated to an eminent collector in North Britain, the Honourable Mrs. Cathcart, distinguished by her zeal and affability.

Species 266. (Mus. Dennison.)

BULIMUS GLANDIFORMIS. *Bul. testā ovatā, ventricosā, vix umbilicatā, anfractibus quatuor ad quinque, rugoso-striatis et granulatis, columellā subtortuosā, labro sublatè reflexo; fumeo-albidā, strigis brevibus fuscis e suturis fulguratā, epidermide olivaceā, luteo-punctatā et marmoratā, indutā.*

THE ACORN-SHAPED BULIMUS. Shell ovate, ventricose, scarcely umbilicated, whorls four to five in number, roughly striated and granulated, columella slightly twisted, lip rather broadly reflected; smoky-white, marked with short zigzag brown streaks out of the sutures, covered with an olive epidermis, dotted and mottled with yellow.

LEA, Extr. Trans. Nat. Hist. Soc. Philadelphia, pl. 23. f. 92.

Hab. New Granada.

It is not without some doubt that I attribute this shell to Mr. Lea's *B. glandiformis*, whose figure is very obscure.

Species 267. (Mus. Dennison.)

BULIMUS PULICARIUS. *Bul. testā ovatā, tenuiculā, vix umbilicatā, anfractibus quatuor ad quinque, inflatis, subtiliter granulatis, longitudinaliter rugoso-striatis, transversim obscurè sulcatis; columellā latè reflexā,*

aperturā subamplā, labro reflexo; albidā, castaneo irregulariter punctatā, labro et interdum fauce apertura purpurascente-roseis, epidermide olivaceo-fuscā aut viridescente indutā.

THE FLEA-SPOTTED BULIMUS. Shell ovate, rather thin, scarcely umbilicated, whorls four to five in number, inflated, finely granulated, longitudinally roughly striated, transversely obscurely grooved; columella broadly reflected; whitish, irregularly dotted with chesnut, lip and sometimes the interior of the aperture purple-rose, covered with an olive-brown or greenish epidermis.

Hab. New Granada.

A delicate species more or less irregularly dotted with black, and richly coloured with rose-purple about the lip and aperture.

Species 268. (Mus. Cuming.)

BULIMUS PLECTOSTYLUS. *Bul. testā ovatā, crassiusculā, vix umbilicatā, anfractibus quatuor ad quinque, rugoso-striatis et minutè granulatis, columellā tortuosā et fortiter plicatā, labro incrassato, reflexo; fumeo-castaneā, punctis perpaucis nigris obscurè notatā, epidermide fuscā indutā, epidermide secundā albā in strigis brevibus e suturis fulguratā.*

THE TWISTED-COLUMN BULIMUS. Shell ovate, rather thick, scarcely umbilicated, whorls four to five in number, roughly striated and minutely granulated, columella twisted and strongly plaited, lip thickened, reflected; smoky chesnut, obscurely marked with a few black dots, covered with a brown epidermis, and a second white epidermis emerging from the sutures in short zigzag streaks.

PFEIFFER, Pro. Zool. Soc., 1847, p. 230.

Hab. Chacopo, Province of Merida, New Granada; Funck.

From the same locality as the preceding species, remarkable for its twisted columella.



269.



270. a.



270. b.



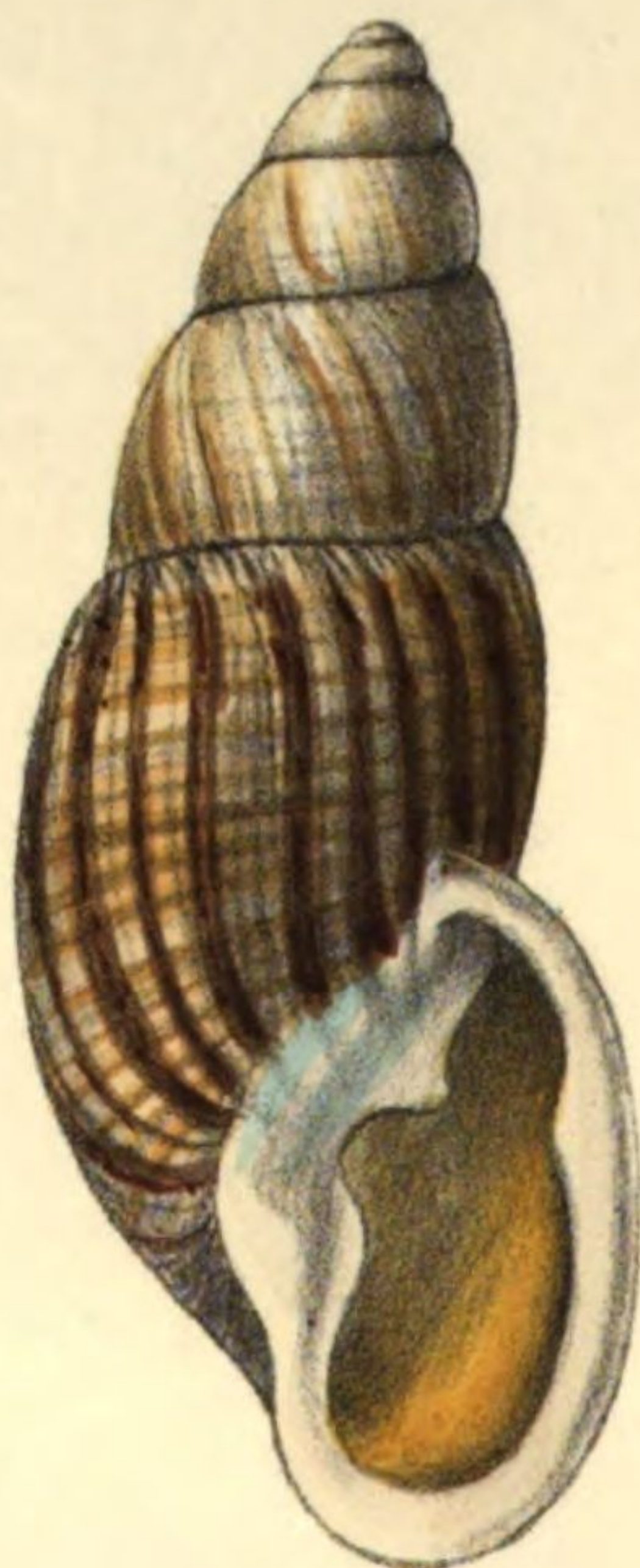
270. c.



271. a.



271. b.



272.



273. a.



273. b.



274.

BULIMUS.

PLATE XLIII.

Species 269. (Mus. Dennison.)

BULIMUS TRI-BALTEATUS. *Bul. testā subfusiformi-ovatā, vix umbilicatā, anfractibus sex, convexis, lævigatis, vel minutè longitudinaliter striatis; aperturā parviusculā, labro subreflexo; pallidè stramineā, zonis tribus castaneis conspicuè balteatā, labro vividè rosaceo.*

THE THREE-BELTED BULIMUS. Shell somewhat fusiformly ovate, slightly umbilicated, whorls six in number, convex, smooth, or minutely longitudinally striated; aperture rather small, lip slightly reflected, pale straw colour, conspicuously belted with three chestnut zones, lip bright pink.

Hab. Santa Fé di Bogota.

A chaste and delicately coloured species, not hitherto described, in the collection of J. Dennison Esq.

Species 270. (Fig. a and b, Mus. Dennison;
Fig. c, Mus. Cuming.)

BULIMUS KNORRI. *Bul. testā fusiformi-ovatā, basi subangulato-productā, ampliter umbilicatā, anfractibus septem, lævibus, sub lente transversim minutè striatis et indentatis; columellā latè reflexā, aperturā oblongo-ovali, basi attenuatā, quasi sinuatā, labro expanso, vix reflexo; stramineā, aut purpureo-fuscā, aut cærulescente-fusco obscurè fasciatā, labro intus aut roseo aut vividè croceo.*

KNORR'S BULIMUS. Shell fusiformly ovate, somewhat angularly produced at the base, largely umbilicated, whorls seven in number, smooth, beneath the lens minutely transversely striated and indented; columella broadly reflected; straw colour, or purple-brown, or obscurely banded with bluish-brown, inner edge of the lip pink or deep saffron yellow.

PFEIFFER, Monog. Hel. viv., p. 95.

Hab. La Guayra.

Chiefly distinguished by a peculiar attenuation of the aperture, and by the deep pink or saffron colouring of the lip. The outer colouring of the shell is extremely variable.

Species 271. (Mus. Dennison.)

BULIMUS XANTHOSTOMA. *Bul. testā fusiformi-ovatā, ampliter umbilicatā, spirā subacuminatā, anfractibus*

octo, lævibus, sub lente transversim minutè striatis et indentatis, columellā latè reflexā, aperturā ovatā, labro latè expanso, vix reflexo; pallidè stramineā vel aurantiā, apice roseā, labro vividè croceo.

THE YELLOW-MOUTH BULIMUS. Shell fusiformly ovate, largely umbilicated, spire somewhat acuminate, whorls eight in number, smooth, transversely minutely striated and indented under the lens, columella broadly reflected, aperture ovate, lip broadly expanded, scarcely reflected; pale straw colour or orange, pink at the apex and bright saffron yellow at the lip.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 312. pl. 40. f. 1, 2.

Hab. Bolivia and Santa Fé di Bogota.

Mainly distinguished from the preceding species by its more acuminate growth, comprising a whorl more, and less oblong form of the aperture.

Species 272. (Mus. Brit.)

BULIMUS BAIRDII. *Bul. testā cylindræo-oblongā, crassā, anfractibus septem, plano-convexis, columellā callositatibus grandibus duabus munitā, aperturā parviusculā, labro incrassato, reflexo; albā fusco-tinctā, columellā labroque eburneis, aperturæ fauce croceā.*

BAIRD'S BULIMUS. Shell cylindrically oblong, thick, whorls seven in number, flatly convex, columella furnished with two large callosities, aperture rather small, lip thickened, reflected; white, stained with brown, lip and columella ivory white, interior of the aperture saffron-yellow.

Hab. — ?

This very interesting shell partakes of the characters of the *B. auris-bovina* and *auris-Midæ*, the latter of which, as may be seen by a comparison of the figure at Pl. 28, with one in Martyn's Universal Conchologist (sub nom. *Helix fibratus*), assumes very different aspects, but none with which the present agrees.

I have the pleasure to name this species in honour of Dr. Baird of the British Museum, as a trifling acknowledgment of his great diligence in sorting the specimens of the national collection, preparatory to their being critically arranged and named.

October, 1848.

Species 273. (Fig. a and b, Mus. Dennison.)

BULIMUS MURRINUS. *Bul. testā fusiformi-ovatā, vix umbilicatā, anfractibus sex, convexis, lævibus, politis, ultimo basi subproductā et attenuatā; aperturā suboblongā, infernè leviter sinuatā, labro expanso, vix reflexo; albidā, livido-olivaceo aut cæruleo-nigro longitudinaliter strigatā et transversim fasciatā, aperturæ fauce vivide purpureā, labro albo.*

THE PORCELAIN BULIMUS. Shell fusiformly ovate, scarcely umbilicated, whorls six in number, convex, smooth, polished, last whorl somewhat produced and attenuated at the base; aperture rather oblong, slightly sinuated at the lower part, lip expanded, scarcely reflected; whitish, longitudinally streaked and transversely banded with livid olive or blue-black, interior of the aperture rich purple, lip white.

Hab. Santa Fé di Bogota.

A beautifully painted species from the collection of

J. Dennison, Esq., nearest allied to the *B. linostoma* of D'Orbigny.

Species 274. (Mus. Cuming.)

BULIMUS CEYLANICUS. *Bul. testā conico-ovatā, solidiusculā, spiræ suturis impressis; anfractibus sex, plano-convexis, obliquè striatis, columellā latè reflexā, aperturā parvā, labro expanso, vix reflexo; intus extusque albā.*

THE CEYLON BULIMUS. Shell conically ovate, rather solid, sutures of the spire impressed; whorls six in number, flatly convex, obliquely striated, columella broadly reflected, aperture small, lip expanded, but slightly reflected; white within and distant.

PFEIFFER, Monog. Hel. viv., vol. ii. p. 59.

Hab. Ceylon.

A rather stout shell of a peculiar conical form.



276.



275.



277.



278 a.



279 a.



279 b.



278 b.



279 c.



280.



281.

BULIMUS.

PLATE XLIV.

Species 275. (Mus. Dennison.)

BULIMUS CHIMBORASENSIS. *Bul. testâ fusiformi, ad basin subattenuatâ, vix umbilicatâ, anfractibus sex, convexis, longitudinaliter creberrimè elevato-striatis; columellâ depresso-reflexâ, labro subexpanso, non reflexo; roseo-fuscescente, albifasciatâ, columellâ labroque vividè purpureo-roseis.*

THE CHIMBORAZO BULIMUS. Shell fusiform, somewhat attenuated at the base, scarcely umbilicated, whorls six in number, convex, longitudinally very closely elevately striated; columella depressly reflected, lip slightly expanded, not reflected; rose-brown, banded with white, lip and columella deep purple-rose.

Bulimus decoratus, Lea (not of Férussac), Obs. vol. ii. pl. 23. f. 108.

Hab. Chimborazo, Columbia, New Granada.

First described by Mr. Lea of Philadelphia from a specimen collected near Carthagenâ, New Granada, by Dr. Gibbon.

Species 276. (Mus. Cuming.)

BULIMUS BICOLOR. *Bul. testâ oblongo-ovatâ, umbilicatâ, ad basin rotundatâ, anfractibus sex, longitudinaliter oblique fortiter rugoso-striatis; cærulescente-albâ, fasciis fuscis interruptis cingulatâ.*

THE TWO-COLOURED BULIMUS. Shell oblong-ovate, umbilicated, rounded at the base, whorls six in number, longitudinally obliquely strongly roughly striated; bluish-white, encircled by interrupted brown bands.

SOWERBY, Pro. Zool. Soc., 1834, p. 141.

Hab. Xagua, Peru; Miller.

The lower edge of the bands is peculiarly broken or serrated.

Species 277. (Mus. Cuming.)

BULIMUS RUBRIFASCIATUS. *Bul. testâ cylindræo-ovatâ, vix umbilicatâ, anfractibus septem, convexis, lævibus, aperturâ parvâ, labro simplici; albidâ, rufo-fusco trifasciatâ, fasciâ medianâ angustâ, lineari.*

THE RED-BANDED BULIMUS. Shell cylindrically ovate, scarcely umbilicated, whorls seven in number, convex, smooth, aperture small, lip simple; whitish, painted with three red-brown bands, of which the central one is narrow and linear.

Hab. — ?

M. Deshayes has, I believe, proposed the name *B. exilis* for this species, already occupied by Gmelin.

Species 278. (Fig. a, Mus. Cuming; Fig. b, Mus. Dennison.)

BULIMUS GEOMETRICUS. *Bul. testâ subcylindræo-turritâ, umbilicatâ, spiræ suturis impressis; anfractibus septem, subrotundatis, lævibus, ultimo peculiariter oblique producto; columellâ latè reflexâ, aperturâ oblique ovatâ, labro reflexo; albidâ, fusco irregulariter tæniatâ et undatâ, vel castaneâ, albifasciatâ, columellâ interdum purpurascente, labro pallidè luteo.*

THE GEOMETRIC BULIMUS. Shell somewhat cylindrically turreted, umbilicated, sutures of the spire impressed; whorls seven in number, slightly rounded, smooth, last whorl peculiarly obliquely produced; columella broadly reflected; aperture obliquely ovate, lip reflected; whitish, irregularly filleted, and waved with brown, sometimes chesnut-brown, banded with white, columella sometimes purple, lip pale yellow.

PFEIFFER, Monog. Hel. viv., vol. ii. p. 59.

Hab. New Granada.

An extremely interesting species distinguished in great measure by the obliquely produced growth of the last whorl.

Species 279. (Fig. a and b, Mus. Dennison; Fig. c, Mus. Cuming.)

BULIMUS VITTATUS. *Bul. testâ oblongo-turritâ, subpellucidâ, subampliter umbilicatâ, anfractibus septem ad octo, lævibus; columellâ reflexâ, labro tenui, simplici; flavicante, purpureo-nigricante sæpissimè variè fasciatâ, interdum fuscescente longitudinaliter strigatâ, interdum undique stramineâ.*

THE RIBAND-BOUND BULIMUS. Shell oblong-turreted, somewhat transparent, rather largely umbilicated, whorls seven to eight in number, smooth; columella reflected, lip thin, simple; yellowish, most frequently variously banded with purple-black, sometimes streaked longitudinally with light brown, sometimes straw-colour throughout.

Spix, Test. Bras., p. 7. pl. 7. f. 4.

October, 1848.

Eadem var.

Bulimus Coxeiranus, Moricand.

Hab. Bahia and Pernambuco, Brazil.

The dark purple-black painting of this species is most variable.

Species 280. (Mus. Cuming.)

BULIMUS STRIGATUS. *Bul. testā oblongo-ovatā, subampliter umbilicatā, anfractibus sex, convexis, longitudinaliter creberrimè elevato-striatis, anfractu ultimo suboblique producto; columellā latè reflexā, labro expanso; cærulescente-albā, livido-nigricante undatā et partim fasciatā, apice nigro.*

THE STREAKED BULIMUS. Shell oblong-ovate, somewhat largely umbilicated, whorls six in number, convex, longitudinally very closely elevately striated, last whorl somewhat obliquely produced; columella broadly reflected, lip expanded; bluish-white, waved and partially banded with livid-black, apex black.

SOWERBY, *Conch. Illus.*, f. 95, 96.

Hab. Huallaga.

The dark painting of this species is partly in bands, and partly in longitudinally waved streaks.

Species 281. (Mus. Dennison.)

BULIMUS BOLIVIANUS. *Bul. testā cylindraco-oblongā, subampliter umbilicatā, anfractibus septem, plano-convexis, lævibus aut obscure striatis; columellā latè reflexā, aperturā parviusculā, labro simplici; albidā, roseo-fusco crebrifasciatā, fasciis irregularibus, subinterruptis, apice roseo-fusco.*

THE BOLIVIAN BULIMUS. Shell cylindrically-oblong, somewhat largely umbilicated, whorls seven in number, flatly convex, smooth or obscurely striated; columella broadly reflected, aperture rather small, lip simple; whitish, closely banded throughout with rose-brown, bands irregular, somewhat interrupted, apex rose-brown.

PFEIFFER, *Pro. Zool. Soc.*, 1846. p. 34.

Hab. Andes of Bolivia.

The bands are less clearly defined in this species than is usual, and in some specimens run into one another.



282 b.



282 a.



283.



284 a.



284 b.



285.



286.



287.



288.



289.

BULIMUS.

PLATE XLV.

Species 282. (Fig. a and b, Mus. Dennison.)

BULIMUS CASTUS. *Bul. testā subfusiformi-ovatā, tenui, gracili, anfractibus quinque ad sex, longitudinaliter tenuiter irregulariter striatis, sub lente striis minutis impressis transversim exsculptis; columellā angustē reflexā, labro expanso, vix reflexo; albā vel pallidē stramineā, fusco interdum sparsim maculatā, columellā labroque pallidē roseis.*

THE CHASTE BULIMUS. Shell somewhat fusiformly-ovate, thin, slender, whorls five to six in number, longitudinally finely irregularly striated, beneath the lens sculptured transversely with minute impressed striæ; columella narrowly reflected; white or pale straw colour, sometimes sparingly spotted with brown, lip and columella pink.

PFEIFFER, Pro. Zool. Soc., 1846, p. 112.

Hab. Central America?

Truly a chaste and delicately coloured species.

Species 283. (Mus. Cuming.)

BULIMUS MORICANDI. *Bul. testā ovatā, tenuiculā, diaphanā, vix umbilicatā, anfractibus sex, lævibus, tumidiusculā, sub lente transversim minutissimè impresso-striatis; columellā reflexā, labro tenui, acuto; intus extusque croceā.*

MORICAND'S BULIMUS. Shell ovate, rather thin, diaphanous, scarcely umbilicated, whorls six in number, smooth, rather swollen, transversely very minutely impressly striated beneath the lens; columella reflected, lip thin, sharp; saffron yellow within and without.

PFEIFFER, Pro. Zool. Soc., 1846, p. 113.

Hab. Central America.

A bright semitransparent yellowish shell, without any trace of marking.

Species 284. (Mus. Cuming.)

BULIMUS ONAGER. *Bul. testā subpyramidalit-turritā, vix umbilicatā, anfractibus septem ad octo, ad basin subangulatis, lævibus; columellā subreflexā, labro expanso; albidā aut lutescente, cæruleo-viridi variè tinctā et longitudinaliter strigatā, aperturæ fauce fusco-rufescente.*

THE WILD-ASS BULIMUS. Shell somewhat pyramidally turreted, scarcely umbilicated, whorls seven to eight in number, slightly angled at the base, smooth; columella but little reflected, lip expanded; whitish or yellowish, variously mottled and streaked with bluish-green, interior of the aperture brownish red.

Bulimulus onager, Beck, Ind. p. 64.

Bulimus zebra, Spix.

Hab. Bahia, Brazil.

A prettily painted species closely allied to *B. vimineus*, but apparently distinct.

Species 285. (Mus. Cuming.)

BULIMUS VENOSUS. *Bul. testā oblongo-ovatā, vix umbilicatā, anfractibus sex ad septem, convexis, lævibus; columellā reflexā, labro tenui, acuto; albidā, lineā castaneā suturali, lineisque castaneis obliquis hic illic longitudinaliter pictā, apice nigro.*

THE VEINED BULIMUS. Shell oblong-ovate, scarcely umbilicated, whorls six to seven in number, convex, smooth; columella reflected, lip thin, sharp; whitish, with a dark chesnut sutural line, and longitudinally painted here and there with chesnut lines, apex black.

Bulimus Menkei, Gruner, Wiegman's Archives, 1841, (not *B. Menkeana*, Férussac.)

Hab. Angosturi, Banks of the Oronoko.

The painted lines are at very unequal distances throughout.

Species 216. (Mus. Cuming.)

BULIMUS RUDIS. *Bul. testā ovatā, ventricosā, vix umbilicatā anfractibus sex, rugosis, longitudinaliter rudè plicato-liratis, columellā reflexā, labro simplici; roseo-albidā, cinereo-fusco hic illic longitudinaliter strigatā, aperturæ fauce roseo-purpurascete.*

THE RUDE BULIMUS. Shell ovate, ventricose, scarcely umbilicated, whorls six in number, rough, longitudinally rudely plicately ridged, columella reflected, lip simple; pinkish-white, longitudinally streaked here and there with ash-brown, interior of the aperture light rose-purple.

ANTON, MSS.?

Hab. Mexico.

October, 1848.

A very characteristic delicately coloured species, of roughly plicated growth.

Species 287. (Mus. Cuming.)

BULIMUS LILIACEUS. *Bul. testā acuminato-ovatā, tenui, diaphanā, anfractibus sex, convexis, lævibus, vel sub lente minutissimè impresso-striatis; columellā angustè reflexā, labro tenui, acuto; pallidè crocato-aurantiā, roseo basin versus tinctā.*

THE LILY-COLOURED BULIMUS. Shell acuminate ovate, thin, diaphanous, whorls six in number, convex, smooth, or very minutely impressly striated beneath the lens; columella narrowly reflected, lip thin, sharp; pale saffron-orange, tinged towards the base with rose.

GUILDING, MSS.?

Hab. St. Vincents, West Indies?

Mr. Cuming possesses this shell as an inhabitant of St. Vincents, accompanied with the above name, as having been given to it by the Rev. Lansdowne Guilding. It is but right, however, to add that the authenticity of this name and locality requires confirmation.

Species 288. (Mus. Cuming.)

BULIMUS TENUISSIMUS. *Bul. testā ovatā, tenui, viz umbilicatā, anfractibus quinque ad sex, obscurè rugoso-striatis; columellā subdepresso-reflexā, labro tenui, acuto; undique sordidè fusciscente.*

THE VERY THIN BULIMUS. Shell ovate, thin, scarcely

umbilicated, whorls five to six in number, obscurely roughly striated; columella somewhat depressly reflected, lip thin, sharp; pale dirty brown throughout.

Helix tenuissima, De Férussac, MSS.

Hab. Brazil.

One of the most common species, says M. Moricand, on the walls, in Brazil.

Species 289. (Mus. Cuming.)

BULIMUS BENGALENSIS. *Bul. testā conico-ovatā, tenuiculā, umbilicatā, anfractibus sex, lævibus, basin versus subangulato-productis; columellā latè reflexā, labro tenui, acuto; albidā, lineā castaneā suturali, anfractu ultimo lineis duabus cingulato, columellā pallidè rosaceā, apice nigro.*

THE BENGAL BULIMUS. Shell conically ovate, rather thin, umbilicated, whorls six in number, smooth, slightly angularly produced towards the base; columella broadly reflected, lip thin, sharp; whitish, with a sutural chesnut line, last whorl encircled round the lower part with two chesnut lines, columella tinged with pink, apex black.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.), vol. viii. p. 233.

Hab. Bengal.

Easily recognised by its black apex and characteristic linear painting, the lower part of the whorls being encircled by two chesnut lines, one of which is concealed in all but the last by the superposition of one whorl upon the other.



290.



291.



292.



293.



294. a.



294. b.



295.



296.



297.



298.

G.B.S. del et lith.

R. B & R. imp.

BULIMUS.

PLATE XLVI.

Species 290. (Mus. Cuming.)

BULIMUS VITRINOIDES. *Bul. testā subgloboso-ovatā, tenuissimā, hyalinā, apice brevi, acuto; anfractibus quinque, subrudē striatis, ultimo ventricosō; columellā labroque simplicibus; pellucido-corneā.*

THE VITRINA-LIKE BULIMUS. Shell somewhat globosely ovate, rather thin, hyaline, apex short, sharp; whorls five in number, somewhat rudely striated, last whorl ventricose; lip and columella simple; transparent horny.

Hab. — ?

This shell looks as if it were composed of fine glass, and is so delicately transparent, that the internal winding of the columella is discernible throughout.

Species 291. (Mus. Benson.)

BULIMUS NILAGARICUS. *Bul. testā cylindraceo-turritā, umbilicatā, anfractibus octo, convexis, concentricē substriatis, et sub lente minutissimē transversim sulcatis, suturis subtiliter crenulatis, columellā labroque expansis, vix reflexis; castaneo-fuscā, nitente, suturis albidis, labro albido.*

THE NEILGHERRY BULIMUS. Shell cylindrically turreted, umbilicated, whorls eight in number, convex, and, under the lens, very minutely grooved transversely, sutures finely crenulated, lip and columella expanded, scarcely reflected; shining chesnut-brown, whitish at the sutures, lip whitish.

PFEIFFER, Pro. Zool. Soc., 1846, p. 41.

Hab. Neilgherry Hills, India; Jerdon.

Of a silken chesnut hue, whitish at the sutures.

Species 292. (Mus. Cuming.)

BULIMUS EXILIS. *Bul. testā subcylindraceo-oblongā, anfractibus sex ad septem, longitudinaliter rudē striatis, columellā labroque simplicibus, aperturā parviusculā; flavido-fuscescente, subhyalinā, aperturæ fauce violaceo-albicante.*

THE DELICATE BULIMUS. Shell somewhat cylindrically oblong, whorls six to seven in number, longitudinally rudely striated, lip and columella simple, aperture

rather small; yellowish-brown, somewhat hyaline, interior of the aperture violet-tinged.

GMELIN, Syst. Nat. p. 3668.

Hab. — ?

The sutures of this species are inclined to be white as in the preceding. It is not unlike the *B. Guadaloupensis*.

Species 293. (Mus. Cuming.)

BULIMUS CINNAMOMEOLINEATUS. *Bul. testā subpyramidal-ovatā, umbilicatā, umbilico parvo; anfractibus septem, convexis, lævibus; columellā plano-reflexā, labro paululum expanso; albidā, lineis cinnamomeis obliquē strigatā, anfractus ultimi basi immaculatā.*

THE CINNAMON-LINED BULIMUS. Shell somewhat pyramidally ovate, umbilicated, umbilicus small; whorls seven in number, convex, smooth; columella flatly reflected, lip a little expanded; whitish, obliquely streaked with cinnamon lines, last whorl unspotted at the base.

Helix cinnamomeo-lineata, Moricand, Mém. Genève, vol. ix. p. 46. pl. 4. f. 6, 7.

Hab. Bahia, Brazil.

The cinnamon lines are suddenly arrested at the base of the last whorl.

Species 294. (Fig. a, Mus. Dennison;
Fig. b, Mus. Cuming.)

BULIMUS GUADALOUPENSIS. *Bul. testā cylindraceo-oblongā, solidiusculā, anfractibus sex, convexis, longitudinaliter rudē et tenuiter striatis, aperturā peculiariter quadrato-ovatā, columellā labroque subexpansis, non reflexis; flavido-fuscescente, nigricante-castaneo interdum conspicuē fasciatā.*

THE GUADALOUPE BULIMUS. Shell cylindrically oblong, rather solid, whorls six in number, convex, longitudinally rudely and finely striated, aperture peculiarly squarely ovate, lip and columella somewhat expanded, not reflected; light yellowish-brown, sometimes conspicuously banded with very dark chesnut.

BRUGUIERE, Enc. Méth. Dict. no. 26.

Hab. West Indies.

Distinguished by the peculiar quadrate form of the aperture.

November, 1848.

Species 295. (Mus. Cuming.)

BULIMUS MULTIFASCIATUS. *Bul. testā oblongo-ovatā, vix umbilicatā, anfractibus sex, lævibus, nitidis, columellā reflexā, labro simplici, acuto; lutescente-albā, zonis roseis, violaceo-nigricante marginatis, cingulatā, apice nigricante.*

THE MANY-BANDED BULIMUS. Shell oblong-ovate, but slightly umbilicated, whorls six in number, smooth, shining, columella reflected, lip simple, sharp; yellowish-white, encircled with pink zones, edged with violet black, apex blackish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 233.

Helix picturata, Férussac.

Hab. West Indies.

Easily recognised by its pretty pink zones, which are brighter as seen in the interior.

Species 296. (Mus. Benson.)

BULIMUS ABYSSINICUS. *Bul. testā conico-ovatā, subampliter umbilicatā, anfractibus sex, ventricosis, subrotundatis, longitudinaliter creberrimè tenuicostatis; columellā latè expansā, aperturā suborbiculari, labro expanso, non reflexo; sordidè albā.*

THE ABYSSINIAN BULIMUS. Shell conically ovate, rather largely umbilicated, whorls six in number, ventricose, somewhat rounded, longitudinally very closely finely ribbed; columella broadly expanded, aperture nearly orbicular, lip expanded, not reflected; dull white.

RUPPELL, MS.

Hab. Abyssinia; Malwah, Central India; Benson.

Finely ribbed somewhat after the manner of the *B. Scleriformis*, but of a more *Pupa*-like character. Published

with the above name on the authority of Mr. Benson, to whose kindness I am indebted for the species.

Species 297. (Mus. Benson.)

BULIMUS JERDONI. *Bul. testā subabbreviato-ovatā, ampliter umbilicatā, spirā breviusculā, acuminatā, anfractibus sex, tumidis, rotundatis, columellā latè reflexā, aperturā suborbiculari, labro expanso, vix reflexo; sordidè olivaceā.*

JERDON'S BULIMUS. Shell somewhat shortly ovate, largely umbilicated, spire rather short, acuminate, whorls six in number, swollen, rounded, columella broadly reflected, aperture nearly orbicular, lip expanded, scarcely reflected; dirty olive-brown.

BENSON, MS.

Hab. Deccan, Hindostan.

A short swollen species with somewhat of the *Pupa* character.

Species 298. (Mus. Cuming.)

BULIMUS BENGUELENSIS. *Bul. testā oblongā, solidiusculā, vix umbilicatā, anfractibus sex, convexis, subtilissimè rudè striatis, columellā reflexā, labro vix expanso, non reflexo; albā, ad umbilicum et suturas pallidè aurantio-fuscescente.*

THE BENGUELA BULIMUS. Shell oblong, rather solid, scarcely umbilicated, whorls six in number, convex, very finely rudely striated; columella reflected, lip but slightly expanded, not reflected; white, light orange-brown at the sutures and about the umbilicus.

Hab. Benguela.

Allied to the *B. Guadaloupensis*, though from a very different locality.



299.



300.



301.



302.



303.



304.



305.



306.



307.



308.

BULIMUS.

PLATE XLVII.

Species 299. (Mus. Benson.)

BULIMUS VIBEX. *Bul. testā cylindraceo-turritā, sinistrali, sub-Pupiformi, diaphanā, umbilicatā, anfractibus novem, convexis, obliquè striatis, aperturā parvā, rotundatā, labro plano-reflexo; pellucido-fuscescente, strigis opaco-albis obliquè notatis.*

THE STRIPED BULIMUS. Shell cylindrically turreted, sinistral, somewhat Pupa-shaped, diaphanous, umbilicated, whorls nine in number, convex, obliquely striated, aperture small, rounded, lip flatly reflected; light transparent brown, obliquely marked with opaque white stripes.

HUTTON, MS., Pfeiffer, Monog. *Bul.* p. 118.

Hab. Simla and Landour, Western Himalaya, India (among moss); Benson.

A reversed cylindrical shell partaking very much of the character of *Pupa*.

Species 300. (Mus. Cuming.)

BULIMUS CREPUNDIA. *Bul. testā subpyramidal-ovatā, tenui, diaphanā, umbilicatā, anfractibus septem, subtilissimè rugoso-striatis, columellā reflexā, labro simplici; pellucido-corneā, opaco-albo hic illic obliquè notatā.*

THE PLAYTHING BULIMUS. Shell somewhat pyramidally ovate, thin, diaphanous, umbilicated, whorls seven in number, very finely roughly striated, columella reflected, lip simple; transparent horny, obliquely marked here and there with opaque white.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 275. pl. 33. f. 18, 19.

Hab. Chiquitos, Bolivia.

It is probably not without some doubt that Dr. Pfeiffer assigns this shell to the *B. crepundia*.

Species 301. (Mus. Benson.)

BULIMUS CŒLEBS. *Bul. testā cylindraceā, Pupiformi, tenui, diaphanā, latè umbilicatā, anfractibus octo, obliquè striatis, columellā latè reflexā, labro expanso non reflexo; pellucido-corneā, strigis opaco-albis obliquè notatā.*

THE BACHELOR BULIMUS. Shell cylindrical, Pupa shaped, thin, diaphanous, broadly umbilicated, whorls

eight in number, obliquely striated, columella broadly reflected, lip expanded, not reflected, transparent horny, obliquely marked with opaque-white streaks.

BENSON, MS., Pfeiffer, Monog. *Bul.* p. 119.

Hab. Landour and Keamaon, Western Himalaya, India, (on dead stems of the wild Indigo); Benson.

This and the two preceding species are of the same texture, a transparent horny substance, obliquely marked with opaque white streaks.

Species 302. (Mus. Benson.)

BULIMUS GRIFFITHSII. *Bul. testā elongatā, subcylindraceā, umbilicatā, anfractibus octo, subplanulatis, lævibus, columella latè reflexā, aperturā subobliquè productā, labro expanso, non reflexo; peculiariter calcareo-albā, aperturæ fauce pallidè aurantio-fuscescente.*

GRIFFITH'S BULIMUS. Shell elongated, somewhat cylindrical, umbilicated, whorls eight in number, rather flattened, smooth, columella reflected, aperture somewhat obliquely produced, lip expanded, not reflected; of a peculiar chalk-white, tinged in the interior with pale orange-brown.

BENSON, MS.

Hab. Afghanistan, India; Griffith.

Named by Mr. Benson after the lamented botanist Dr. Griffith, by whom the specimen here figured was collected.

Species 303. (Mus. Benson.)

BULIMUS SINDICUS. *Bul. testā cylindraceo-elongatā, latè umbilicatā, anfractibus novem, plano-convexis, lævibus aut concentricè striatis, aperturā parvā, columellā labroque expansis, vix reflexis; griseo-albā, strigis pellucidis hic illic obliquè notatā.*

THE SINDE BULIMUS. Shell cylindrically elongated, broadly umbilicated, whorls nine in number, flatly convex, smooth or concentrically striated, aperture small, lip and columella expanded, but slightly reflected; greyish white, here and there obliquely marked with pellucid streaks.

BENSON, MS.

Hab. Near the head waters of the river Sinde, India; Benson.

November, 1848.

Mr. Benson informs me that this species was first collected by Capt. Hutton in the warmer vallies of the sub-Himalayan range, on the left bank of the Sutledge; and that specimens were transmitted to him from Khyber Pass by Capt. Barr.

Species 304. (Mus. Cuming.)

BULIMUS LIVESCENS. *Bul. testā acuminato-ovatā, sub-turritā, tenui, anfractibus septem, subrotundatis, lævibus, columellā simplici, labro tenui, acuto; livescens-albā, interdum zonulis fuscis angustis tribus cingulatā.*

THE BLuish BULIMUS. Shell acuminate ovate, rather turreted, thin, whorls seven in number, somewhat rounded, smooth, columella simple, lip thin, sharp; bluish-white, encircled with three narrow light-brown zones.

PFEIFFER, Monog. *Bul.* p. 175.

Hab. Tehuaca, Mexico.

It should be observed that in the banded variety the two lower bands, which are frequently broader than the uppermost, are only seen in the last whorl.

Species 305. (Mus. Cuming.)

BULIMUS FUSCAGULA. *Bul. testā cylindraceo-elongatā, basi compressā, subumbilicatā, Pupiformi, anfractibus novem, obtusè striatis et peculiariter indentatis, columellā bilamellatis, aperturā parvā, contractā, expansā; sub-corneā, opaco-lutescente-albo strigatā et subtiliter reticulatā, labro roseo.*

THE FUSCOUS-THROAT BULIMUS. Shell cylindrically elongated, compressed at the base, slightly umbilicated, Pupa shaped; whorls nine in number, obtusely striated and peculiarly indented, columella with two tooth-like laminae, aperture small, contracted, expanded; somewhat horny, streaked and finely reticulated with opaque yellowish white, lip rose.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 310. pl. 39. f. 1, 2.

Hab. Rio Janeiro.

Very closely allied to *B. Janeirensis*, and from the same locality; it seems, however, to differ in the columellar laminae and reticulated arrangement of the opaque pattern.

Species 306. (Mus. Cuming.)

BULIMUS HELENA. *Bul. testā subobeso-cylindraceutā, tenui,*

umbilicatā, anfractibus sex, rotundatis, striis minutis creberrimè decussatis, suturis impressis, columellā labroque vix reflexis; squalidè olivaceā, semipellucidā.

THE HELENA BULIMUS. Shell somewhat stoutly cylindrical, thin, umbilicated, whorls six in number, rounded, very closely decussated with minute striæ, sutures impressed, lip and columella scarcely reflected; dirty olive, semitransparent.

QUOY and GAIMARD, Voy. dans l'Astrol. vol. 2. p. iii. pl. 9. f. 82.

Hab. St. Helena.

The minute decussated striæ of this species are scarcely discernible without the aid of a lens.

Species 307. (Mus. Cuming.)

BULIMUS CONSTRICTUS. *Bul. testā pyramidaliconicā, umbilicatā, anfractibus septem, rotundatis, striis transversis et longitudinalibus minutissimè decussatis, suturis peculiariter impressis; albidā, semipellucidā, epidermide tenui olivaceā indutā.*

THE TIED BULIMUS. Shell pyramidally conical, umbilicated, whorls seven in number, rounded, very minutely decussated with longitudinal and transverse striæ, sutures peculiarly impressed; whitish, semitransparent, covered with a thin olive epidermis.

PFEIFFER, Symbolæ, vol. 1. p. 43.

Bulimus Angosturensis, Gruner.

Hab. Angostura; Gruner.

Mainly characterized by the impressed growth of the sutures.

Species 308. (Mus. Cuming.)

BULIMUS DIGITALE. *Bul. testā obeso-ovatā, umbilicatā, spiræ suturis peculiariter profundè impressis, anfractibus quinque ad sex, subtiliter granuloso-reticulatis, columellā reflexā, labro simplici; olivaceo-fuscā.*

THE THIMBLE BULIMUS. Shell stoutly ovate, umbilicated, sutures of the spire peculiarly deeply impressed, whorls five to six in number, finely granulously reticulated, columella reflected, lip simple; olive-brown.

Hab. — ? *A Helena.*

The surface of this shell is reticulated in a delicate wrinkled manner, covered by a silken olive epidermis, and the sutures are universally deeply impressed.



310.



309.



311.



312.



313.



314.



315.



316.



317.



318.

BULIMUS.

PLATE XLVIII.

Species 309. (Mus. Cuming.)

BULIMUS MACULATUS. *Bul. testâ sub-pyramidalis-ovatâ, vix umbilicatâ, anfractibus convexis, lævibus, transversim sub lente minutissimè impresso-striatis, columellâ reflexâ, labro simplici, acuto; viridescens-albâ, maculis fusco-olivaceis, quadratis hic illic notatâ.*

THE SPOTTED BULIMUS. Shell somewhat pyramidally ovate, scarcely umbilicated, whorls convex, smooth, transversely very minutely impressly striated, columell reflected, lip simple, acute; greenish-white, marked here and there with square brownish olive spots.

LEA, Obs. vol. ii. p. 84. p. 23, f. 97.

Hab. Carthagera, New Granada.

The square spots though irregular and scattered are mostly situated in the same line longitudinally.

Species 310. (Mus. Cuming.)

BULIMUS TRILINEATUS. *Bul. testâ oblongo-ovatâ, tenuiculâ, anfractibus sex, subrugoso-striatis, ad suturas crenulatis, labro tenui, acuto; albidâ, strigis rufo-fuscis longitudinalibus plus minusve densè notatâ.*

THE TRILINEATED BULIMUS. Shell oblong ovate, rather thin, whorls six in number, somewhat roughly striated, crenulated at the sutures, lip thin, sharp; whitish, more or less thickly marked with red-brown longitudinal stripes.

QUOY and GAIMARD, Voy. dans l'Astrol. vol. ii. p. 107, pl. 9. f. 1 to 3.

Hab. New Holland.

It is necessary to observe that this species is named after a character in the animal, whose neck and back are marked with three lines.

Species 311. (Mus. Cuming.)

BULIMUS MANOELLII. *Bul. testâ acuminato-ovatâ, subumbilicatâ, anfractibus septem, lævibus, aut obliquè indistinctè striatis, columellâ latè reflexâ, labro tenuicula, vix reflexo; albidâ, anfractu ultimo infernè purpureo-olivaceo bifasciato.*

MANOEL'S BULIMUS. Shell acuminately ovate, slightly umbilicated, whorls seven in number, smooth, or obliquely indistinctly striated, columella broadly re-

flected, lip rather thin, scarcely reflected; whitish, last whorl encircled round the lower part with two purple olive bands.

Helix Manoellii, Moricand, Mém. de Genève, vol. ix. p. 45. pl. 4. f. 4, 5.

Hab. Bahia, Brazil.

The upper band, being exactly on the sutural line, is nearly concealed in all but the last whorl.

Species 312. (Mus. Cuming.)

BULIMUS ANGIOSTOMA. *Bul. testâ sub-cylindraco-ovatâ, vix umbilicatâ, anfractibus octo, tumidiusculis, ultimo ad aperturam peculiariter compresso; aperturâ oblongâ, angustâ, labro eximie plano-reflexo; cinereo-albidâ, lineis nigricantibus et fuscis longitudinaliter pictâ, aperturæ fauce fuscâ.*

THE NARROW-MOUTH BULIMUS. Shell somewhat cylindrically ovate, scarcely umbilicated, whorls eight in number, rather swollen, last whorl peculiarly compressed at the aperture; aperture oblong, narrow, lip delicately flatly reflected; ashy white, longitudinally painted with black and brown lines, interior of the aperture brown.

WAGNER, Spix. Test. Bras. p. 14. pl. 13. f. 4.

Bulimus Capueira, Spix.

Testa junior. *Bulimus virgatus*, Spix.

Hab. Brazil.

The singular compression of the aperture forms a very characteristic feature in this species.

Species 313. (Mus. Cuming.)

BULIMUS OREADES. *Bul. testâ acuminato-oblongâ, umbilicatâ, anfractibus sex ad septem, lævibus, vel minutissimè impresso-striatis, columellâ reflexâ, labro tenui, acuto; flavicante-albidâ, strigis olivaceo-fuscis, anfractuum medio desinentibus, peculiariter notatis.*

THE OREADES BULIMUS. Shell acuminately oblong, umbilicated, whorls six to seven in number, smooth, or very minutely impressly striated, columella reflected, lip thin, sharp; yellowish-white, peculiarly marked with olive-brown streaks, ending in the middle of the whorls.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 270. pl. 31. f. 11.

Hab. Province of Corrientes, Argentine Republic, Bolivia (under dead leaves); D'Orbigny.

The chief specific peculiarity of this species resides in the painting, which does not descend below the sutural line of the whorls.

Species 314. (Mus. Cuming.)

BULIMUS FERIATUS. *Bul. testā subfusiformi, vix umbilicatā, anfractibus sex, subtiliter rugoso-striatis, suturis impressis, columellā reflexā, aperturā parviusculā, labro expanso; fuscescente, fusco strigatā et variegatā, punctis albis aspersā.*

THE UNEMPLOYED BULIMUS. Shell somewhat fusiform, scarcely umbilicated, whorls six in number, finely roughly striated, sutures impressed, columella reflected, aperture rather small, lip expanded, light brown, streaked and variegated with bright brown, sprinkled with white dots.

Hab. —?

Dr. Pfeiffer, when in London, attributed this shell to the *B. lophoicus* of D'Orbigny, but it fails to agree with the description and figure of that species, and appears to be equally distinct from all others.

Species 315. (Mus. Benson.)

BULIMUS BONTIÆ. *Bul. testā conico-ovatā, tenui, ventricosā, subtiliter umbilicatā, anfractibus quinque, minutè obliquè striatis, medio tumidis, inflatis, columellā latè reflexā, labro tenui, expanso, non reflexo.*

THE BONTIA BULIMUS. Shell conically ovate, thin, ventricose, finely umbilicated, whorls five in number, minutely obliquely striated, swollen and inflated round the middle, columella broadly reflected, lip thin, expanded, not reflected.

Helix Bontia, Chemnitz, Conch. Cab. vol. ix. p. 156. pl. 134. f. 1216, 1217.

Hab. Southern India; Jerdon.

An extremely rare species, though described upwards of sixty years since by Chemnitz in his Conchylien Cabinet. The specimen here represented, for which I am indebted to the kindness of Mr. Benson, was collected in Southern India by Mr. Jerdon of Madras.

Species 316. (Mus. Cuming.)

BULIMUS CONFUSUS. *Bul. testā oblongo-ovatā, tenuiculā,*

vix umbilicatā, spiræ suturis impressis, anfractibus sex, convexis, longitudinaliter creberrimè plicato-striatis, et hic illic indentatis; fuscescente-albidā.

THE PUZZLING BULIMUS. Shell oblong-ovate, rather thin, scarcely umbilicated, sutures of the spire impressed, whorls six in number, convex, longitudinally very closely plicately striated, and here and there indented; light brownish white.

Hab. —?

This shell resembles M. D'Orbigny's *B. Torallyi* in form, but does not agree with it in the detail of character.

Species 317. (Mus. Cuming.)

BULIMUS QUITENSIS. *Bul. testā conico-ovatā, subampliter umbilicatā, anfractibus septem, convexis, concentricè subrugoso-striatis; columellā labroque vix reflexis; fuscescente castaneo-fusco hic illic strigatā, umbilico nigricante, columellā labroque purpureo-castaneis, nitentibus.*

THE QUITO BULIMUS. Shell conically ovate, rather largely umbilicated, whorls seven in number, convex, concentrically rather roughly striated, lip and columella scarcely reflected; light-brown, streaked here and there with chesnut-brown, umbilicus blackish, lip and columella shining purple chesnut.

PFEIFFER, Pro. Zool. Soc., 1847.

Hab. Quito, Republic of Equador.

The general aspect of this shell is not much unlike that of an immature *Partula faba*.

Species 318. (Mus. Cuming.)

BULIMUS MONILIFER. *Bul. testā subpyramidal-ovatā, umbilicatā, anfractibus convexis, lævibus, columellā reflexā, aperturā subquadratā, labro simplici; opaco-albā, fasciis duabus interruptis aurantio-fuscis, valde indistinctis, cingulatā, aperturā aurantio-tinctā.*

THE NECKLACE-BOUND BULIMUS. Shell somewhat pyramidally ovate, umbilicated, whorls convex, smooth, columella reflected, aperture somewhat square, lip simple; opake-white, encircled with two very indistinct interrupted orange-brown bands, aperture tinged with orange.

Hab. —?

Indistinctly encircled by two characteristic interrupted bands. The aperture is remarkable for the same lateral compression as in the *B. Guadaloupensis*.



320. a.



319.



320. b.



321.



322.



323.



324.



326.



325.

BULIMUS.

PLATE XLIX.

Species 319. (Mus. Cuming.)

BULIMUS FABREFACTUS. *Bul. testā pyramidalī, ad basin angulato-compressā et umbilicatā, anfractibus septem, longitudinaliter rugoso-striatis et inequaliter indentatis, columellā reflexā, aperturā ad basin canaliculatā, labro simplici; albidā, fusco subtiliter et creberrimè strigatā, strigis ad angulum basalem tantum descendentibus, columellā pallidè rosaceā, aperturæ fauce cærulescente.*

THE CURIOUSLY-FORMED BULIMUS. Shell pyramidal, angularly compressed and umbilicated at the base, whorls seven in number, longitudinally roughly striated and irregularly indented, columella reflected, aperture channelled at the base, lip simple; whitish, finely and closely streaked with brown, the streaks descending only to the basal angle, columella tinged with pink, interior of the aperture bluish.

Hab. Province of Merida, New Granada; Linden.

Of the same peculiarly angled structure at the base as the *B. canaliculatus*, from which it is amply distinguished by its more elongated form, solid growth, and different style of colouring.

Species 320. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS VIRGULATUS. *Bul. testā acuminato-oblongā, vix umbilicatā, anfractibus septem, lævibus, aperturā ovatā, labro simplici; albā, fasciis castaneis interruptis variè dispositis, interdum rufescente-croceā, immaculatā.*

THE STRIPED BULIMUS. Shell acuminate oblong, scarcely umbilicated, whorls seven in number, smooth, aperture ovate, lip simple; white, with interrupted chesnut bands, variously disposed, sometimes of a rich reddish saffron, unspotted.

Cochlogena virgulata, Férussac, Hist. Moll. pl. 142. B. f. 1-7.

Bulimus Caribbeorum, Lamarck.

Hab. West Indies.

Extremely variable both in colour and pattern.

Species 321. (Mus. Cuming.)

BULIMUS LITUS. *Bul. testā oblongo-ovatā, tenui, ventricosā, vix umbilicatā, anfractibus sex, obliquè creberrimè striatis, labro tenui simplici; albidā, nigricante-cæruleo longitudinaliter maculatā et undatā.*

THE MOTTLED BULIMUS. Shell ovate, thin, ventricose, scarcely umbilicated, whorls six in number, obliquely very closely striated, lip thin, simple; whitish, longitudinally blotched and waved with blackish-blue.

Helix lita, Férussac, Prodrome, p. 54.

Bulimus lituratus, Spix.

Bulimus magus, Wagner.

Hab. Brazil.

Very closely allied to the *B. papyraceus*, which it is not improbable may be another state of the species.

Species 322. (Mus. Cuming.)

BULIMUS MILTOCHEILUS. *Bul. testā acuminato-oblongā, subcylindraceā, umbilicatā, anfractibus sex, lævigatis, semipellucidis, nitentibus, longitudinaliter peculiariter plicatis, columellā latè reflexā, aperturā oblongā, labro reflexo; cereo-albā, labro intensè coccineo-miniato.*

THE VERMILION-LIP BULIMUS. Shell acuminate oblong, somewhat cylindrical, umbilicated, whorls six in number, smooth, semitransparent, shining, longitudinally peculiarly plaited, columella broadly reflected, aperture oblong, lip reflected; waxen-white, lip deep scarlet-vermilion.

Hab. San Christoval, south-eastern island of Solomon's Group, north-east coast of New Holland.

A shell of curiously plaited growth, remarkable for its semipellucid wax-like appearance, with which its rich vermilion lip presents a notable contrast. Mr. Cuming possesses several specimens from the above named locality, all in the same condition, which seems perfectly natural and not the result of any artificial clearing.

Species 323. (Mus. Cuming.)

BULIMUS RHODOSTOMA. *Bul. testā ovatā, subventricosā, umbilicatā, anfractibus sex, longitudinaliter subrudè striatis, ad suturas crenulatis, columellā reflexā, labro simplici; roseo-brunnescente.*

THE ROSE-MOUTH BULIMUS. Shell ovate, rather ventricose, umbilicated, whorls six in number, longitudinally somewhat rudely striated, crenulated at the sutures; columella reflected, lip simple; rose-brown.

GRAY, Pro. Zool. Soc., 1834, p. 65.

Hab. New Holland?

November, 1848.

This shell has been ascribed to the above-recorded species in Mr. Cuming's collection, and is so published here, but, it should be added, with considerable doubt.

Species 324. (Mus. Cuming.)

BULIMUS HYEMATUS. *Bul. testā acuminato-ovatā, anfractibus septem, peculiariter plicato-corrugatis, aperturā parviusculā, labro simplici; cinerascēte-albā, aperturæ fauce roseo-purpureā.*

THE FROZEN BULIMUS. Shell acuminately ovate, whorls seven in number, peculiarly plicately wrinkled, aperture rather small, lip simple; pale ash-white, rose-purple in the interior.

Hab. — ?

The surface of this shell is plicately wrinkled in a manner different from any other species. Externally it is of French-white hue, purplish towards the apex, and the mouth is tinged with deep purple-rose throughout.

Species 325. (Mus. Cuming.)

BULIMUS SPORADICUS. *Bul. testā elongato-ovatā, pyramidalī, vix umbilicatā, anfractibus octo, sublævibus, aperturā parvā, labro tenui, acuto; albidā, nigricante-fusco variè lineatā et undatā.*

THE SCATTERED BULIMUS. Shell elongately ovate, pyramidal, scarcely umbilicated, whorls eight in number, more or less smooth, aperture small, lip thin, sharp; whitish, variously lineated and waved with bluish-brown.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 271. pl. 32. f. 12 to 15.

Hab. Patagonia, Bolivia; D'Orbigny.

M. D'Orbigny describes this species to be widely distributed over South America, and very abundant.

Species 326. (Mus. Cuming.)

BULIMUS TÆNIOLUS. *Bul. testā cylindraco-ovatā, ad basin rotundatā, anfractibus septem, minutè granulatis, ad suturas crenulatis, columellā reflexā, labro vix reflexo; fulvo-castaneā, ad suturas albizonatā, aperturæ fauce lividā, peritremate albido.*

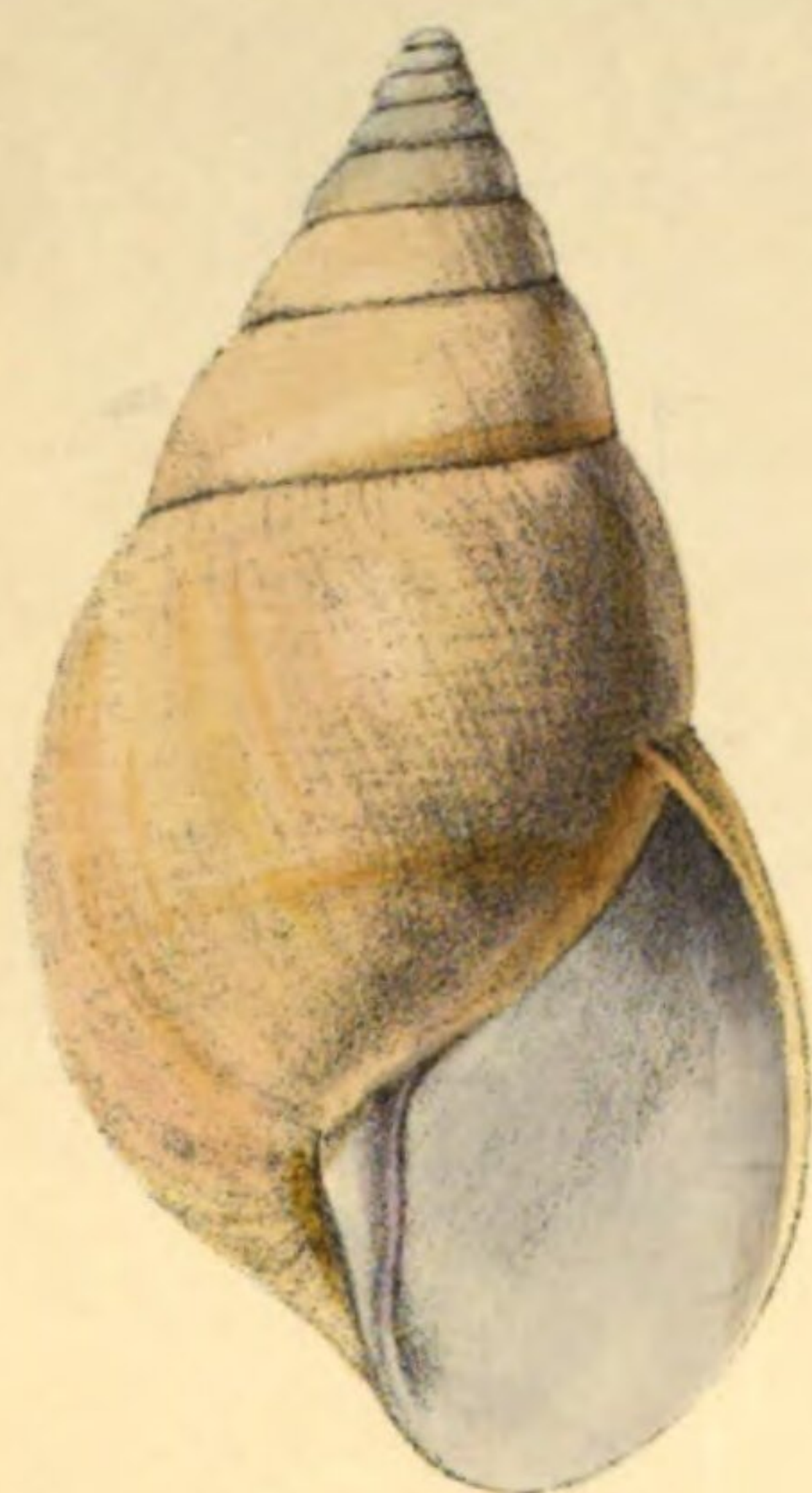
THE FILLETED BULIMUS. Shell cylindrically ovate, rounded at the base, whorls seven in number, minutely granulated, crenulated at the sutures, columella reflected, lip scarcely reflected, fulvous chesnut, zoned with white at the sutures, interior of the aperture livid, peritreme white.

NYST, Ext. Acad. Royale de Bruxelles, p. 9. pl. 3. f. 4. a, b.

Hab. South America.

Of a peculiar obtusely rounded growth at the base.

sulcosus
(Speiffer)



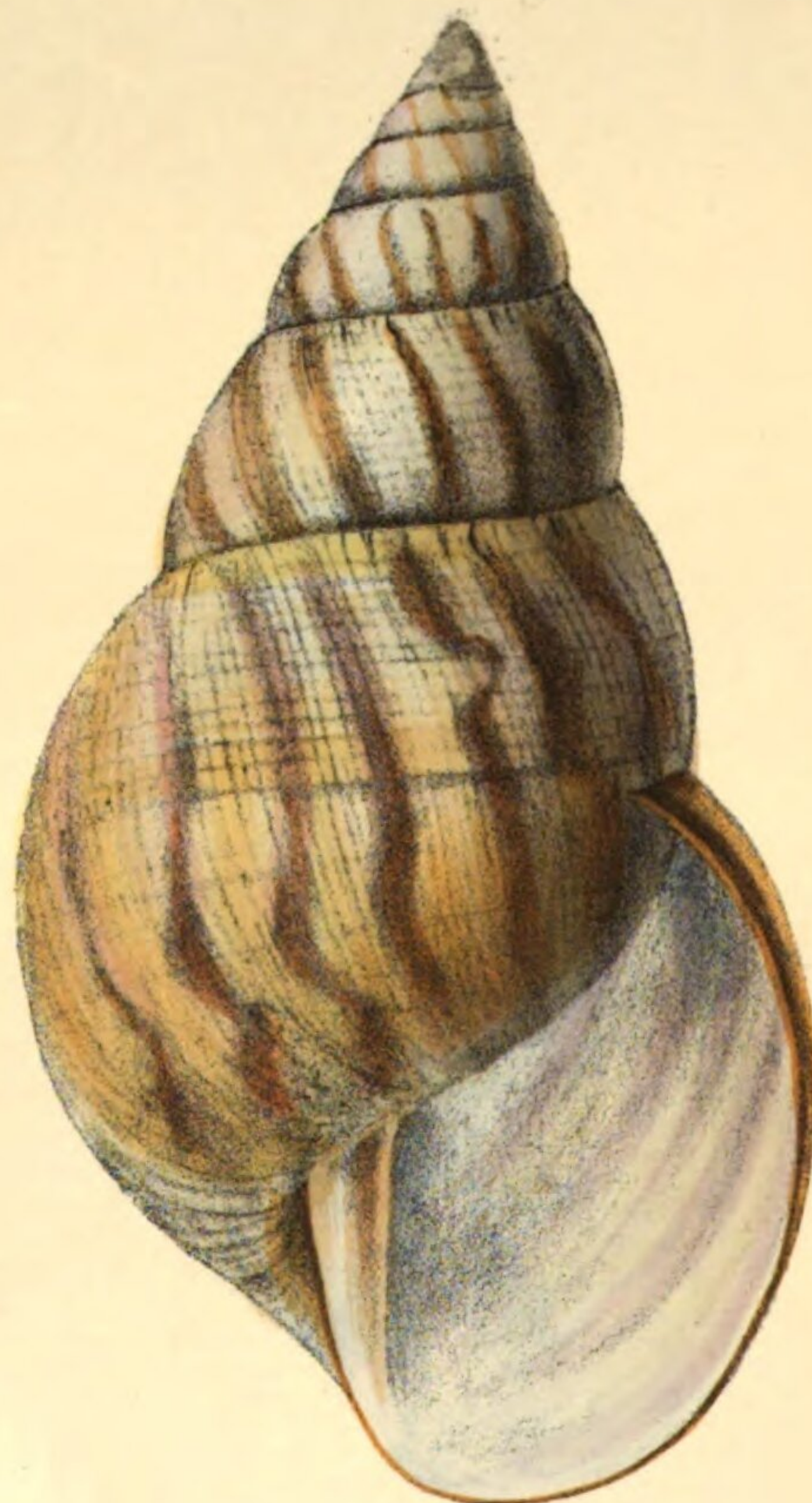
328.



327.



329.



330.

BULIMUS.

PLATE L.

Species 327. (Fig. 327, 328. Mus. Cuming.)

BULIMUS ADANSONI. *Bul. testā oblongo-ovatā, tenuiculā, vix umbilicatā, anfractibus novem, subtilissimè granulato-striatis, ad suturas subtiliter crenulatis, columellā rectā, revolutā, labro simplici, acuto; albidā, castaneo-fusco conspicuè longitudinaliter flammata, epidermide tenui stramineā indutā, columellā et aperturæ fauce purpurascete-cæruleis.*

ADANSON'S BULIMUS. Shell oblong-ovate, rather thin, scarcely umbilicated, whorls nine in number, very finely granulately striated, finely crenulated at the sutures, columella straight, rolled back, lip simple, sharp; whitish, conspicuously longitudinally flamed with chesnut-brown, covered with a thin straw-coloured epidermis, columella and interior of the aperture purplish-blue.

PFEIFFER, Monog. *Bul.* p. 179.

Le Kambeul, Adanson.

Bulimus Kambeul, Bruguière.

Cochlogena ædilis, Férussac.

Fide Pfeiffer.

Bulimus speciosus, Parreys.

—— *Kordofanus*, Parreys.

—— *xantholinus*, Ziegler.

—— *Achatinoides*, Ziegler.

Hab. West coast of Africa.

Dr. Pfeiffer's name for this species is to be preferred to that adopted by Bruguière and Lamarek, which does not enter strictly in the Latin form of nomenclature.

For Species 328, see Pl. LVIII.

Species 329. (Mus. Cuming.)

BULIMUS RUPPELLIANUS. *Bul. testā subabbreviato-ovatā,*

ventricosā, vix umbilicatā, anfractibus septem, creberrimè plano-granulatis, columellā rectā, revolutā, labro simplici, acuto; albidā, flammis subangustis castaneo-fuscis longitudinaliter pictā, epidermide tenui stramineā indutā.

RUPPELL'S BULIMUS. Shell somewhat shortly ovate, ventricose, scarcely umbilicated, whorls seven in number, very closely flatly granulated, columella straight, rolled back, lip simple, sharp; whitish, longitudinally painted with rather narrow chesnut-brown flames, covered with a thin straw-coloured epidermis.

PFEIFFER, Monog. *Bul.* p. 190.

Hab. Abyssinia'; Ruppell.

Constantly distinguished from the preceding species by its shortened ventricose growth.

Species 330. (Mus. Cuming.)

BULIMUS AFRICANUS. *Bul. testā acuminato-ovatā, profundè umbilicatā, anfractibus novem, subrotundatis, reticulato-striatis et subtilissimè concentricè corrugatis, ad suturas crenatis, columellā rectā, revolutā; livido-albidā, castaneo-fusco pallidè flammata, flammis subdistantibus.*

THE AFRICAN BULIMUS. Shell acuminate ovate, deeply umbilicated, whorls nine in number, somewhat rounded, reticulately striated and very finely concentrically wrinkled, crenated at the sutures, columella straight, rolled back; livid white, faintly marked with rather distant longitudinal chesnut-brown flames.

Hab. West coast of Africa.

This seems constantly distinguished from the *B. Adan-soni* in size, in form, and in pattern of colouring.

November, 1848.

Bulinus, Pl. LI.



G. B. S. del et lith.

R. B. & R. imp.

BULIMUS.

PLATE LI.

Species 331. (Mus. Cuming.)

BULIMUS MUTILATUS. *Bul. testā attenuato-pyramidalī, crassiusculā, umbilicatā, anfractibus quatuor ad quinque, deinde latè decollatis, obliquè rudè striatis, anfractu ultimo basi subangulato-tumido, aperturā parvā, rotundā; squalidè albā.*

THE MUTILATED BULIMUS. Shell attenuately pyramidal, rather thin, umbilicated, whorls four to five in number, then broadly decollated, obliquely rudely striated, last whorl somewhat angularly swollen at the base, aperture small, rounded, dirty-white.

Hab. — ?

Distinguished from the *B. decollatus* by its more attenuately pyramidal form and contracted aperture.

Species 332. (Mus. Cuming.)

BULIMUS GRUNERI. *Bul. testā cylindraneo-turritā, subumbilicatā, anfractibus septem, plani-convexis, lævibus, nitidis, columellā depresso-reflexā, aperturā parviusculā, labro tenui, simplici; cærulescente-albā, maculis fuscescentibus subquadratis hic illic irregulariter fasciatim notatā, apice purpureo-nigricante.*

GRUNER'S BULIMUS. Shell cylindrically turreted, slightly umbilicated, whorls seven in number, flatly convex, smooth, shining, columella depressly reflected, aperture rather small, lip thin, simple; bluish-white, marked here and there with irregular bands of light brown square-like spots, apex purple-black.

PFEIFFER, Pro. Zool. Soc. 1846. p. 30.

Hab. Mexico.

Named in honour of Mr. Gruner, an eminent collector at Bremen.

Species 333. (Mus. Cuming.)

BULIMUS ALBATUS. *Bul. testā acuminato-oblongā, subumbilicatā, anfractibus octo, convexis, lævibus, columellā reflexā, labro simplici; albā, interdum fasciis interruptis brunneis duabus vel tribus cingulatā, aperturæ fauce subaurantiā.*

THE WHITE BULIMUS. Shell acuminate oblong, slightly umbilicated, whorls eight in number, convex, smooth, columella reflected, lip simple; white, sometimes encircled with two or three interrupted brown bands, interior of the aperture tinged with orange.

PFEIFFER, Symbolæ, vol. ii. p. 42.

Helix albata, De Férussac.

Bulimus bicinctus, Recluz.

Hab. Yemen, Arabia.

Rarely more than a single indistinct band is visible on the upper whorls.

Species 334. (Mus. Cuming.)

BULIMUS DECOLLATUS. *Bul. testā cylindraneo-elongatā, anfractibus ad septem, deinde decollatis, plano-convexis, striis spiralibus et obliquis subtiliter decussatis, margine crenulatis, columellā reflexā, aperturā parviusculā, labro simplici; albidā, aut pallidè spadiceā.*

THE DECOLLATED BULIMUS. Shell cylindrically elongated, whorls about seven in number, then decollated, flatly convex, finely decussated with spiral and oblique striæ, crenulated at the margin, columella reflected, aperture rather small, lip simple; whitish, or pale fawn-colour.

BRUGUIERE, Enc. Méth. Dict. no. 49.

Helix decollata, Linnæus.

Hab. South of Europe. Sicily and the Canary Islands.

This well-known species occurs in a larger state in some parts of Northern Africa.

Species 335. (Mus. Cuming.)

BULIMUS AURATUS. *Bul. testā oblongo-turritā, tenuissimā, pellucidā, anfractibus septem, subcentricosis, longitudinaliter creberrimè elevato-striatis, columellā simplici, labro tenui, acuto; aureo-olivaceā, vitreā, lineis minutis fuscis spiralibus obsoletè notatā.*

THE GILDED BULIMUS. Shell oblong-turreted, very thin, transparent, whorls seven in number, rather ventricose, longitudinally very closely elevately striated, columella simple, lip thin, sharp; golden-olive, glassy, obsoletely marked with minute spiral brown lines.

PFEIFFER, Pro. Zool. Soc. 1846. p. 32.

Hab. — ?

A delicate glassy species of the substance and colour of a *Vitrina*.

Species 336. (Mus. Cuming.)

BULIMUS KINGII. *Bul. testā acuminato-ovatā, crassiusculā, vix umbilicatā, anfractibus septem, lævibus aut obscure striatis, columellā latè reflexā, labro simplici; albā, lineis fuscis frequentibus longitudinaliter pictā, columellā fuscā, aperturæ fauce fusciscente.*

KING'S BULIMUS. Shell acuminate ovate, rather thick, scarcely umbilicated, whorls seven in number, smooth or obscurely striated, columella broadly reflected, lip simple; white, longitudinally painted with numerous brown lines, columella brown, interior of the aperture light brown.

GRAY, Annals of Philosophy, New Series, vol. ix. p. 414.

Wood, Ind. Test. Supp. pl. 7. f. 27.

Hab. New Holland; King.

The brown colouring of the columella has a kind of metallic hue.

Species 337. (Mus. Metcalfe.)

BULIMUS MAXIMUS. *Bul. testā oblongā, ventricosā, anfractibus sex, tumidis, subrotundatis, longitudinaliter rudè striatis, penultimo granulato, prope apicem subtiliter radiatim costellatis, columellā subrectā, crassiusculā, aperturā parviusculā, labro solidulo, reflexo; sordidè albā, purpureo-brunnescente tinctā, epidermide luteo-olivaceā nitente indutā, columellā et peritremate albis.*

THE VERY LARGE BULIMUS. Shell oblong, ventricose, whorls six in number, swollen, somewhat rounded, longitudinally rudely striated, last whorl but one granulated, finely radiately ribbed near the apex, columella nearly straight, somewhat thick, aperture rather small, lip solid, reflected; dirty white, stained with light purple-brown, covered with a shining yellowish-olive epidermis, columella and peritreme white.

Cochlogena maximas, Sowerby, Tankerville Catalogue, Appendix, p. vii.

Bulimus Kremnoicus, D'Orbigny.

Hab. Santa Cruz, Bolivia; D'Orbigny.

Although a large species, is this inferior in size to the *B. Popelairianus*, from which it differs in its more oblong proportions and smaller aperture.

Species 338. (Mus. Cuming.)

BULIMUS EFFEMINATUS. *Bul. testā acuminato-oblongā, subumbilicatā, tenuiculā, anfractibus octo, subplanulatis, longitudinaliter exiliter impresso-striatis, columellā reflexā, labro simplici, acuto; cærulescente-albā, apicem versus purpurascete-fuscis, strigis angustis fuscis distantibus.*

THE EFFEMINATE BULIMUS. Shell acuminate oblong, slightly umbilicated, rather thin, whorls eight in number, somewhat flattened, longitudinally delicately impressly striated, columella reflected, lip simple, sharp; bluish white, purple-brown towards the apex, with distant narrow stripes of the same colour.

Hab. —?

A delicate opaque-white shell gradually more deeply tinged with purple-brown towards the apex.

Species 339. (Mus. Cuming.)

BULIMUS OLIVIERI. *Bul. testā ovatā, ventricosā, anfractibus sex ad septem, longitudinaliter exiliter plicato-costellatis, interstitiis subtilissimè decussatis et punctatis, columellā reflexā, margine incrassatā, labro incrassato, reflexo; sericeo-brunneā, subolivaceā, peritremate flavicante.*

OLIVIER'S BULIMUS. Shell ovate, ventricose, whorls six to seven in number, somewhat flattened, longitudinally delicately plicately ribbed, with the interstices very finely decussated and punctured, columella reflected, thickened at the edge, lip thickened and reflected; silken-brown, of an olive hue, peritreme yellowish.

PFEIFFER, Monog. *Bul.* p. 117.

Hab. Abyssinia.

An exceedingly beautiful species in fine condition, when examined with the lens.



340.



341.



343.



342.



344.



345.

BULIMUS.

PLATE LII.

Species 340. (Mus. Cuming.)

BULIMUS SYLVATICUS. *Bul. testā elongato-turritā, gracilimā, solidiusculā, anfractibus undecim, plano-convexis, lævibus, aut minutissimè striatis, politis, apice subpapillaribus, aperturā parvā, columellā labroque simplicibus; eburneā, epidermide tenui stramineā partim indutā.*

THE SYLVAN BULIMUS. Shell elongately turreted, very slender, rather solid, whorls eleven in number, flatly convex, smooth, polished, somewhat papillary at the apex, aperture small, lip and columella simple; ivory white, partially covered with a light straw-coloured epidermis.

WAGNER, Spix. Test. Bras. p. 11. pl. 10. f. 4.

Hab. Mexico and Brazil (in the woods); Spix.

A semitransparent ivory-white shining shell, partially covered with a slight epidermis.

Species 341. (Mus. Cuming.)

BULIMUS TEREBRASTER. *Bul. testā elongato-turritā, tenui, pellucidā, apice tumidā, subtruncatā, anfractibus novem undique creberrimè concentricè elevato-striatis, columellā tenui, simplicissimā, introrsum arcuatā, labro tenuissimo, acuto; corneo-luteā.*

THE TERETE BULIMUS Shell elongately turreted, thin, transparent, whorls nine in number, swollen at the apex, somewhat truncated, very closely concentrically sculptured throughout with raised striæ, columella thin, very simple, arched inwardly, lip very thin and sharp; horny yellow.

FERUSSAC, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. 8. p. 234.

Bulimus haplostylus, Pfeiffer.

Hab. El Catamajia, near Loxa, Republic of Equador, South America; Hartweg.

Chiefly distinguished by the very simple structure of the columella and the raised concentric striæ which have almost the appearance of fine ribs.

I am indebted to a visit to the collection of the Rev. S. C. E. Neville Rolfe of Heacham Hall, for having had my attention directed to the above recorded species of De Férussac, with which Dr. Pfeiffer does not seem to have been acquainted.

Species 342. (Mus. Cuming.)

BULIMUS CALCAREUS. *Bul. testā elongato-turritā, apicem versus solidiusculā, tumidā, anfractibus duodecim, longitudinaliter subtiliter striatis, striis minutis impressis spiralibus decussatis, aperturā parvā, columellā labroque simplicibus; calcareo-albā, epidermide castaneo-brunneo nitente indutā.*

THE LIME-WHITE BULIMUS. Shell elongately turreted, rather solid and swollen towards the apex, whorls twelve in number, longitudinally finely striated, decussated with minute spiral impressed striæ, aperture small, lip and columella simple; chalk-white, covered with a shining chesnut brown epidermis.

WAGNER, Spix. Test. Bras. p. 10.

Helix calcarea, Born.

Bulimus maritimus, Spix, Deshayes.

Hab. Brazil,

M. Deshayes is correct in assigning this species to the *B. maritimus* of Spix, but it will be found to agree also with the *Helix calcarea* of Born, represented in the Mus. Cæs. Vindobonense, stripped of its rich brown chesnut epidermis, beneath which it is of a peculiar opake lime-white character. It is the largest and most solid of the turriculated *Bulimi*, and has not a reflected lip.

Species 343.¹ (Mus. Cuming.)

BULIMUS OBELISCUS. *Bul. testā elongato-turritā, acuminatā, anfractibus sedecim ad octodecim, plano-convexis, subtiliter obliquè striatis, striis minutissimis spiralibus impressis decussatis, columellā labroque simplicissimis; albā, epidermide tenuiculā luteo-olivaceā indutā.*

THE OBELISK BULIMUS. Shell elongately turreted, acuminate, whorls eighteen in number, flatly convex, finely obliquely striated, and decussated with very minute spiral impressed striæ, lip and columella very simple; whitish, covered with a rather thin yellowish epidermis.

Helix obeliscus, Moricand, Mém. Genève, vol. vi. p. 540. pl. 1. f. 4.

Hab. Near Caravalhas, Brazil; Moricand.

Distinguished by having the largest number of whorls and most sharply terete growth, whilst the epidermis is very thin, and of a light yellowish olive-colour. It should

be observed that the shell grows to a more acuminate point than in the specimen here represented, which has the first whorls broken off.

Species 344. (Mus. Cuming.)

BULIMUS OBTUSATUS. *Bul. testā elongato-turritā, basi subobliquè productā, umbilicatā, apice tumidā, obtusā, anfractibus decem ad undecim, plano-convexis, obliquè creberrimè costulato-striatis, aperturā ovali, labro incrassato, paululum reflexo; lutescente-albā, rufo-fusco hic illic irregulariter tinctā et strigatā.*

THE BLUNTED BULIMUS. Shell elongately turreted, rather obliquely produced at the base, umbilicated, swollen and obtuse at the apex, whorls ten to eleven in number, flatly convex, obliquely very closely sculptured with rib-like striæ, aperture oval, lip thickened, a little reflected; yellowish-white, irregularly stained and streaked here and there with red-brown.

PFEIFFER, Monog. *Bul.* p. 151.

Helix obtusata, Gmelin.

Bulimus calcareus, Bruguière, Lamarck, Deshayes.

Hab. Madagascar; Beck.

This shell, distinguished by Lamarck as having a reflected lip, has been confounded with the *Helix calcarea* of Born, an examination of whose figure will show that it represents a worn specimen of Sp. 342, deprived of its epidermis.

Species 345. (Mus. Cuming.)

BULIMUS CLAVATOR. *Bul. testā elongato-oblongā, basi tumidā et subobliquè productā, vix umbilicatā, anfractibus octo, longitudinaliter rudè elevato-striatis, ad suturas crenulatis, columellā subdepresso-reflexā, labro simplici, aut paululum reflexo, supernè compresso; pallidè livido-olivaceā.*

THE CLUB-BEARER BULIMUS. Shell elongately oblong, swollen and somewhat obliquely produced at the base, scarcely umbilicated, whorls eight in number, longitudinally rudely striated, crenulated at the sutures, columella somewhat depressly reflected, lip simple or a little reflected, compressed at the upper part; pale livid olive.

PETIT, Mag. de Zool. 1844, pl. 94.

Hab. Madagascar.

The sutures, as in many species of this form, are white.



347.



346.



348.



349.



350.



352.



351.

BULIMUS.

PLATE LIII.

Species 346. (Mus. Cuming.)

BULIMUS CONSIMILIS. *Bul. testā oblongā, subcylindrā, basi rotundatā, tenui, anfractibus sex ad septem, longitudinaliter tenui-striatis, ultimo ventricosiusculo, columellā simplicissimā, labro simplici; brunnescente, nitente, strigis saturatoribus hic illic notatā, aperturæ fauce cærulescente.*

THE SIMILAR BULIMUS. Shell oblong, somewhat cylindrical, rounded at the base, thin, whorls six to seven in number, longitudinally finely striated, last whorl rather ventricose, columella very simple, lip simple; light brown, marked here and there with streaks of darker brown, interior of the aperture bluish.

Hab. — ?

This shell approaches nearest to the *B. Taunaisii*, but is certainly distinct.

Species 347. (Mus. Cuming.)

BULIMUS TENEBRICUS. *Bul. testā cylindrā-oblongā, anfractibus septem ad octo, subrotundatis, prope suturas subtilissimè reticulatis, margine crenulatis, columellā revolutā, labro simplici, acuto; albidā, purpureo-roseo tinctā, purpureo-nigricante conspicuè grandimaculatā.*

THE DARKENED BULIMUS. Shell cylindrically oblong, whorls seven to eight in number, rather rounded, very finely reticulated near the sutures, crenulated along the edge, columella rolled back, lip simple, sharp; whitish, stained with purple-rose and conspicuously painted with large blotches of purple-black.

Hab. Ibu, West Africa; Fraser.

Distinguished from *B. flammeus*, by its dwarf-like growth and rich purple-rose hue. The specimen here represented, was collected by Mr. Fraser during the unfortunate Expedition to explore the source of the Niger.

Species 348. (Mus. Cuming.)

BULIMUS SPECTRALIS. *Bul. testā cylindrā-oblongā, vix umbilicatā, anfractibus septem, lævibus, columellā revolutā, labro tenui, acuto; albidā, epidermide tenui, stramineā indutā.*

THE SPECTRAL BULIMUS. Shell cylindrically oblong,

slightly umbilicated, whorls seven in number, smooth, columella rolled back, lip thin, sharp; whitish, covered with a thin straw-coloured epidermis.

Hab. — ?

Care must be taken not to confound this species with the uncoloured variety of *B. flammeus*, from which it differs in form, and in not being reticulated.

Species 349. (Mus. Metcalfe.)

BULIMUS INCA. *Bul. testā cylindrā-oblongā, umbilicatā, anfractibus septem ad octo, longitudinaliter plicato-striatis, suturis subprofundis, columellā latè reflexā, labro paululum reflexo; nigricante-brunneā, subolivaceā, columellā albā, aperturæ fauce purpureo-cinereā.*

THE INCA BULIMUS. Shell cylindrically oblong, umbilicated, whorls seven to eight in number, longitudinally plicately striated, sutures rather deep, columella broadly reflected, lip a little reflected; blackish-brown, tinged with olive, columella white, interior of the aperture purple-ash.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 292. pl. 38. f. 6, 7.

Hab. Yungas and Cochabamba, Bolivia; D'Orbigny.

The specimen here represented from the collection of Mr. Metcalfe, is the only one that I am aware of in this country.

Species 350. (Mus. Dennison.)

BULIMUS SUFFUSUS. *Bul. testā elongato-cylindrā, umbilicatā, anfractibus novem, subobsoletè plicato-striatis, margine crenulatis, lævibus, nitidis, suturis profundis, aperturā parvā, oblongā, columellā revolutā, labro simplici, acuto; albā, roseo suffusā, epidermide tenui lutescente indutā.*

THE BLUSHING BULIMUS. Shell elongately cylindrical, umbilicated, whorls nine in number, rather obsoletely plicately striated, crenulated at the margin, smooth, shining, sutures deep, aperture small, oblong, columella rolled back, lip simple, acute; whitish, suffused with rose, and covered with a thin yellowish epidermis.

Hab. — ?

November, 1848.

Of a peculiarly swollen cylindrical form, approximating to *B. chrysalidiformis* in an immature state, but of a totally different texture and detail of character.

Species 351. (Mus. Cuming.)

BULIMUS NUMIDICUS. *Bul. testā pyramidali-turritā, anfractibus novem, subrotundatis, subtilissimè reticulato-striatis, margine crenulatis, columellā revolutā, labro simplici, acuto; lutescente-albā, rufo-castaneo peculiariter flammeā.*

THE NUMIDIAN BULIMUS. Shell pyramidally turreted, whorls nine in number, somewhat rounded, very finely reticulately striated, crenulated at the edge, columella rolled back, lip simple, sharp; yellowish white, peculiarly flamed with reddish chesnut.

Hab. Prince's Island, West Africa.

This species has been probably confounded by many with the *B. flammeus*, from which it constantly differs in form, sculpture, and colouring.

Species 352. (Mus. Cuming.)

rubicunda *Sh. null*
BULIMUS FLAMMEUS. *Bul. testā oblongo-turritā, anfractibus octo, subrotundatis, reticulato-striatis, columellā revolutā, labro simplici, acuto; lutescente-albā, apicem versus purpureo-rubente, castaneo-brunneo latiflammeā, aperturæ fauce cærulescente.*

THE FLAMED BULIMUS. Shell oblong-turreted, whorls eight in number, somewhat rounded, reticulately striated, columella rolled back, lip simple, sharp; yellowish-white, tinged with purple-red towards the apex; and broadly flamed with dark chesnut-brown, interior of the aperture bluish.

BRUGUIERE, Enc. Méth. vol. i. p. 322.

Helix flammea, Muller.

Hab. Banks of the Niger, Africa; Fraser.

Distinguished from the preceding species by its more oblong form, absence of sutural crenulations, purple-rose colouring, and broader flames.



353. b.



353. a.



354.



355.



356.



357.



358.



359.



360.



361.

G. B. S. del et lith.

R. B. & R. imp.

BULIMUS.

PLATE LIV.

Species 353. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS ROSEATUS. *Bul. testā oblongo-ovatā, tenuiculā, vix umbilicatā, anfractibus sex ad septem, subventricosis, transversim minutissimè impresso-striatis, columellā reflexā, labro subexpanso, tenui, acuto; albidā, roseo exiliter tinctā, strigis fusciscentibus longitudinalibus interdum supernè notatā.*

THE ROSEATE BULIMUS. Shell oblong-ovate, rather thin, scarcely umbilicated, whorls six to seven in number, rather ventricose, transversely very minutely impressly striated, columella reflected, lip somewhat expanded, thin, sharp; whitish, faintly tinged with rose, and sometimes marked round the upper part with brownish longitudinal streaks.

Hab. Venezuela.

A delicately coloured species, approximating closely in form and style of painting to the *B. oreades*.

Species 354. (Mus. Cuming.)

BULIMUS FERIATUS. *Bul. testā acuminato-oblongā, vix umbilicatā, anfractibus sex, transversim sub lente minutissimè impresso-striatis, columellā reflexā, labro expanso, simplici, vix reflexo; virescente-albā, maculis paucis olivaceo-fuscis quadratis prope apicem notatis, fasciā conspicuā circa umbilicum.*

THE UNEMPLOYED BULIMUS. Shell acuminate oblong, scarcely umbilicated, whorls six in number, transversely very minutely impressly striated beneath the lens, columella reflected, lip expanded, simple, slightly reflected; greenish-white, marked near the apex with a few square olive-brown spots, and a conspicuous band round the umbilicus.

Hab. Venezuela.

Another interesting new species from the same locality as the preceding.

Species 355. (Mus. Cuming.)

BULIMUS PERDIX. *Bul. testā ovato-oblongā, solidiusculā, umbilicatā, anfractibus quinque ad sex, longitudinaliter creberrimè elevato-striatis, gibbosiusculis, columellā obscure plicatā, labro reflexo; albidā, flammis maculis punctisque cæruleo-nigricantibus variegatā, columellā supernè purpurascente.*

THE PARTRIDGE BULIMUS. Shell ovately oblong, rather solid, umbilicated, whorls five to six in number, longitudinally very closely elevately striated, rather gibbous, columella obscurely plaited, lip reflected; whitish, variegated with blue-black flames blotches and dots, columella purplish at the upper part.

PFEIFFER, Pro. Zool. Soc., 1847.

Hab. New Granada; Funck.

This and the three following having been described as separate species, and, not to differ in a case which may be regarded a matter of opinion, they are here published as such; I cannot however forbear expressing my conviction that notwithstanding their apparent differences of form and detail of growth, they are but so many modified conditions of the same species. In the state described as *B. perdix*, the longitudinal striæ are extremely regular, the aperture is rounded, and the plait of the columella is only obscurely developed at the upper part.

Species 356. (Mus. Cuming.)

BULIMUS EURYOMPHALUS. *Bul. testā fusiformi-oblongā, solidiusculā, umbilicatā, basi angulato-compressā, anfractibus quinque ad sex, creberrimè longitudinaliter striatis, columellā plicatā, aperturā trigono-contractā, labro reflexo; cærulescente-albā, punctis maculisque fulgorantibus nigricantibus variegatā, columellā intensè purpureā.*

THE BROAD-PLAITED BULIMUS. Shell fusiformly oblong, rather solid, umbilicated, angularly compressed at the base, whorls five to six in number, very closely longitudinally striated, columella plaited, aperture triangularly contracted, lip reflected; bluish-white, clouded with black zigzag blotches and dots, columella deep purple.

Hab. Venezuela; Dyson.

Chiefly distinguished by its clouded zigzag style of painting.

Species 357. (Mus. Cuming.)

BULIMUS GLABER. *Bul. testā subfusiformi-ovatā, umbilicatā, crassā, solidā, basi subcontractā, anfractibus quinque ad sex, longitudinaliter corrugato-striatis, columellā plicatā, labro incrassato, reflexo; albidā, strigis griseo-rubentibus nebulatā et variegatā.*

December, 1848.

THE SMOOTH BULIMUS. Shell somewhat fusiformly ovate, umbilicated, thick, solid, slightly contracted at the base, whorls five to six in number, longitudinally striated in a wrinkled manner, columella plaited, lip thickened, reflected; whitish, clouded and variegated with greyish-red streaks.

GMELIN, Syst. Nat. p. 3436.

Cochlogena auris-caprinus, De Férussac.

Auricula Sileni, Lamarck.

Bulimus ægotis, Menke.

Hab. West Indies.

This has a somewhat closer affinity with the two following species than with the two which precede.

Species 358. (Mus. Dennison.)

BULIMUS DISTORTUS. *Bul. testâ fusiformi-oblongâ, crassâ, solidâ, basi angulato-compressâ, anfractibus quinque ad sex, longitudinaliter corrugato-striatis, ad suturas interdum crenulatis, columellâ fortiter plicatâ, aperturâ trigono-contractâ, labro incrassato, reflexo; albidâ, cinereo-rubente variegatâ et partim strigatâ, columellâ intensè purpureâ.*

THE DISTORTED BULIMUS. Shell fusiformly oblong, thick, solid, angularly compressed at the base, whorls five to six in number, longitudinally striated in a wrinkled manner, sometimes crenulated at the sutures, columella strongly plaited, aperture triangularly contracted, lip thickened, reflected; whitish, variegated and partially streaked with ash-red, columella deep purple.

BRUGUIERE, Enc. Méth. vol. i. p. 344.

Auris Midæ distortus, Chemnitz.

Cochlogena distorta, De Férussac.

Plekocheilus distortus, Beck.

Hab. Venezuela.

This is the type of the group, Sp. 355 to 358, which, as before mentioned, I am inclined to think are but one species in different states.

Species 359. (Mus. Cuming.)

BULIMUS RIMATUS. *Bul. testâ cylindræo-elongatâ, tenui, subcornéâ, latè umbilicatâ, anfractibus sex, lævibus, nitidiusculis, columellâ expansâ, aperturâ suborbiculari et productâ; fuscescente.*

THE CLEFTED BULIMUS. Shell cylindrically elongated, thin, somewhat horny, broadly umbilicated, whorls six in number, smooth, rather shining, columella expanded, aperture nearly orbicular and produced; light brown.

PFEIFFER, Pro. Zool. Soc., 1846. p. 112.

Hab. —?

Mainly distinguished by the rounded *Pupa*-like growth of the aperture.

Species 360. (Mus. Cuming.)

BULIMUS CULMINEUS. *Bul. testâ oblongo-ovatâ, crassiusculâ, vix umbilicatâ, anfractibus septem, minutissimè plano-granulatis, longitudinaliter rudè elevato-striatis, columellâ reflexâ, subcontortâ, labro simplici, subexpanso; albidâ, apicem versus cinereo-fuscescente tinctâ, lineolis rufis hic illic notatâ.*

THE LOFTY-DWELLING BULIMUS. Shell oblong-ovate, rather thick, scarcely umbilicated, whorls seven in number, very minutely flatly granulated, longitudinally rudely elevately striated, columella reflected, somewhat twisted, lip simple, slightly expanded; whitish, stained with pale brownish ash-colour towards the apex, and marked here and there with longitudinal red lines.

For authority, locality, and remarks on this species see Pl. XVII. Sp. 98, in which place a shell is represented agreeing better with the *B. lithoicus* of D'Orbigny.

Species 361. (Mus. Dennison.)

BULIMUS SCHIEDEANUS. *Bul. testâ ovatâ, crassâ, subampliter umbilicatâ, anfractibus sex, convexis, longitudinaliter rugoso-striatis, columellâ reflexâ, incrassatâ, labro incrassato, non reflexo; calcareo-albâ, aperturæ fauce croceo-aurantiâ.*

SCHIEDE'S BULIMUS. Shell ovate, rather largely umbilicated, thick, whorls six in number, convex, longitudinally roughly striated, columella reflected, thickened, lip thickened, not reflected; chalk-white, interior of the aperture tinged with saffron-orange.

PFEIFFER, Monog. *Bul.* p. 187.

Hab. Mexico.

A very solid opaque chalk-white shell, tinged with saffron orange in the interior.



362.



363.



364.



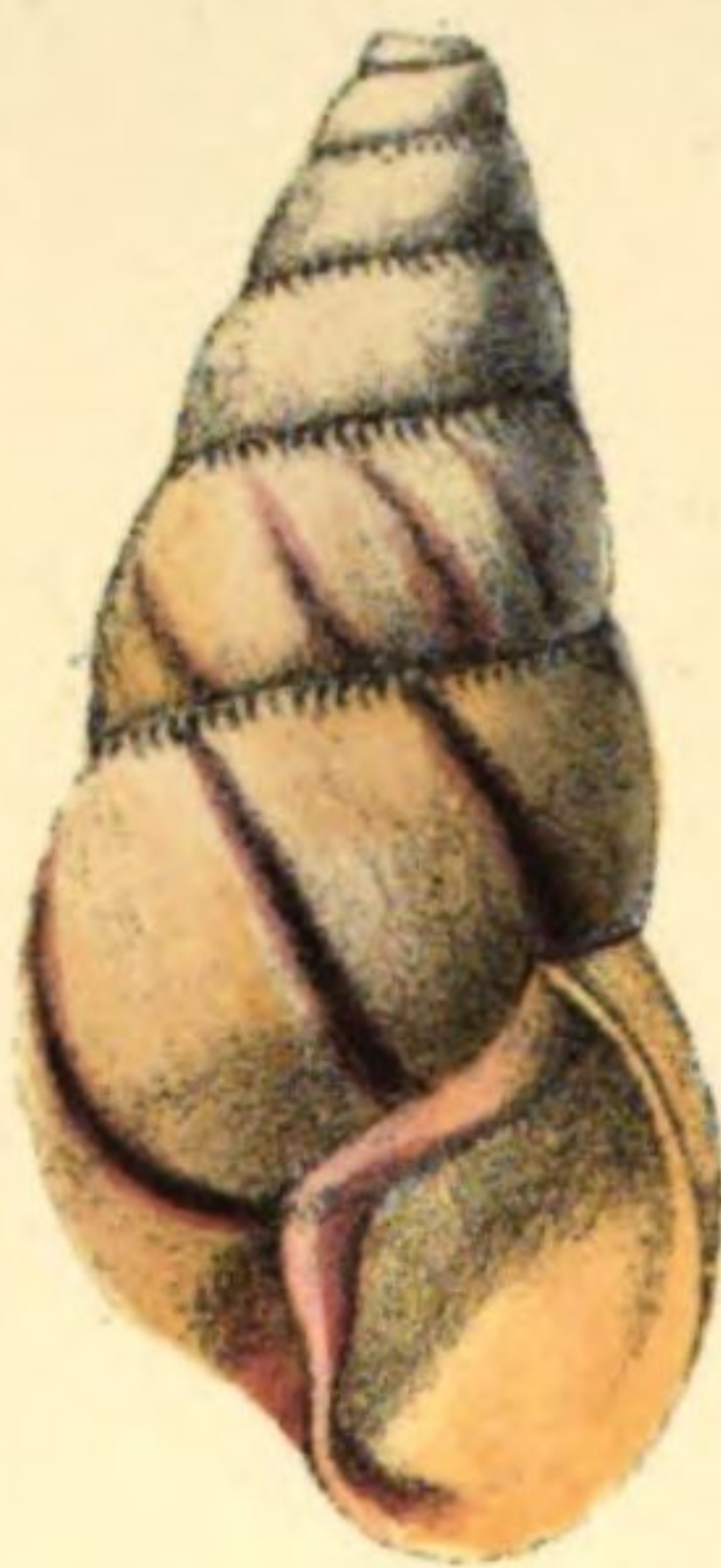
365.



366. a.



366. b.



367.



368.



369.



370.

379 *B. nigrofasciatus*
Lefl.

G. B. J. del et sculp.

R. B. & R. imp.

BULIMUS.

PLATE LV.

Species 362. (Mus. Dennison.)

BULIMUS VELUTINUS. *Bul. testā conico-ovatā, inflatā umbilicatā, anfractibus sex, ultimo maximo, striis obtusis longitudinalibus et transversis creberrimè decussatis; columellā peculiariter reflexā, labro tenui, paululum reflexā; intus extusque vividè brunneā.*

THE VELVETTY BULIMUS. Shell conically ovate, inflated, umbilicated, whorls six in number, the last very large, very closely decussated with obtuse longitudinal and transverse striæ; columella peculiarly reflected, lip thin, a little reflected; bright brown within and without.

PFEIFFER, Symbolæ, vol. i. p. 42.

Bulimus strigilosus, Dufo.

Hab. Seychelle Islands.

A very delicately formed, largely inflated shell of a rich brown-colour, the surface being decussated in a manner that gives it a soft velvety appearance.

Species 363. (Mus. Dennison.)

BULIMUS JONASI. *Bul. testā subfusiformi oblongā, vix umbilicatā, anfractibus sex, longitudinaliter rugosoplicatis, columellā reflexā, labro simplici; diaphanā, plicis opaco-lacteis, columellā purpurascente.*

JONAS' BULIMUS. Shell somewhat fusiformly oblong, scarcely umbilicated, whorls six in number, longitudinally roughly plicated, columella reflected, lip simple; diaphanous, folds opake cream-colour, columella light purple.

PFEIFFER, Philippi, Abild. *Bul.* pl. 5. f. 4.

Hab. Vera Cruz, Central America.

A very delicate and graceful shell, having the longitudinal folds of an opake cream-colour, whilst the interstices are transparent, and the columella tinged with purple.

Species 364. (Mus. Cuming.)

BULIMUS ANDICOLA. *Bul. testā pyramidali-oblongā, subumbilicatā, anfractibus septem, lævibus, columellā reflexā, aperturā parviusculā, labro simplici, acuto; albidā, strigis perpaucis rufo-fuscescentibus hic illic longitudinaliter pictā.*

THE ANDES-INHABITING BULIMUS. Shell pyramidally oblong, slightly umbilicated, whorls seven in number, smooth, columella reflected, aperture rather small, lip simple, acute; white, longitudinally painted here and there with a very few reddish-brown streaks.

PFEIFFER, Pro. Zool. Soc., 1846, p. 115.

Hab. Columbian Andes.

Of somewhat doubtful character and apparently of immature growth.

Species 365. (Mus. Cuming.)

BULIMUS PALLIDIOR. *Bul. testā acuminato-ovatā, subventricosā, ampliter umbilicatā, anfractibus septem, lævibus, vel obscure striatis, columellā labroque expansis; albā, intus aurantio tinctā.*

THE PALER BULIMUS. Shell acuminate ovate, rather ventricose, largely umbilicated, whorls seven in number, smooth, or obscurely striated, lip and columella expanded; white, tinged in the interior with orange.

SOWERBY, Conch. Illus. *Bulimus*, Fig. 39 and 44.

Hab. —?

Very like *B. proteus* in general aspect, but destitute of granules or any similar sculpture.

Species 366. (Fig. a and b, Mus. Cuming.)

BULIMUS VINCENTINUS. *Bul. testā fusiformi-ovatā, tenuiculā, subpellucidā, anfractibus sex, lævibus, nitentibus, sub lente transversim minutissimè inciso-striatis, columellā plano-reflexā, aperturā oblongā, labro subexpanso; lutescente-albā, interdum castaneo fasciatā.*

THE ST. VINCENT BULIMUS. Shell fusiformly ovate, rather thin, somewhat transparent, whorls six in number, smooth, shining, transversely very minutely striated in an engraved manner under the lens, columella flatly reflected, aperture oblong, lip somewhat expanded; yellowish white, sometimes banded with chesnut.

PFEIFFER, Pro. Zool. Soc., 1846. p. 30.

Hab. Venezuela; Linden. Island of St. Vincent?

I fear the locality assigned to this species in the name given to it by Dr. Pfeiffer, is somewhat doubtful.

Species 367. (Mus. Cuming.)

BULIMUS INTERSTINCTUS. *Bul. testā cylindraceo-pyramidali, non umbilicatā, anfractibus septem, subrotundatis, obliquè rudè striatis, infra suturas peculiariter crenulatis, columellā subcontortā, aperturā parvā, labro tenui, simplici; pellucido-albā, strigis perpaucis fuscis hic illic obliquè pictā, epidermide tenui corneā indutā, columellā roseā.*

December, 1848.

THE DIVIDED BULIMUS. Shell cylindrically pyramidal, not umbilicated, whorls seven in number, somewhat rounded, obliquely rudely striated, peculiarly crenulated beneath the sutures, columella slightly twisted, aperture small, lip thin, simple; transparent white, obliquely painted here and there with a very few brown stripes, covered with a thin horny epidermis, columella pink.

GOULD, Pfeiffer, Monog. *Bul.* p. 169.

Eadem var.

Bulimus rubicundulus, Gould.

Hab. Cape Palmas, West Africa.

An interesting species distinguished by a peculiar beaded row of fine crenulations beneath the sutures, and a delicate pink columella.

Species 368. (Mus. Cuming.)

BULIMUS INGLORIUS. *Bul. testā subacuminato-oblongā, tenuiculā, subumbilicatā, anfractibus sex, rugoso-striatis et obscure rudē planigranulatis, columellā latē reflexā, labro tenui, simplici; spadiceo-albā, strigis fuscis albivariiegatis irregulariter pictā.*

THE UNIMPORTANT BULIMUS. Shell somewhat acuminate oblong, rather thin, slightly umbilicated, whorls six in number, roughly striated and obscurely rudely flatly granulated, columella broadly reflected, lip thin and simple; fawn-white, irregularly painted with a few white-mottled brown streaks.

Hab. — ? *Mexico*

A delicately painted species not possessing any remark-

able character, but certainly distinct from any other that I am acquainted with.

Species 369. (Mus. Cuming.)

BULIMUS MANUPICTUS. *Bul. testā acuminato-ovatā, basi subattenuatā, umbilicatā, anfractibus sex, lævibus vel obscure striatis, columellā reflexā, labro simplici; albicante, purpureo-fusco conspicuē longitudinaliter virgatā.*

THE HAND-PAINTED BULIMUS. Shell acuminate ovate, somewhat attenuated at the base, whorls six in number, smooth or obscurely striated, columella reflected, conspicuously longitudinally striped with purple-brown.

Hab. Andes of Columbia.

Of a somewhat diamond-shaped form.

Species 379. (Mus. Cuming.)

BULIMUS NIGROFASCIATUS. *Bul. testā ovatā, subventricosā, vix umbilicatā, anfractibus sex, subtiliter rudē striatis, columellā reflexā, labro tenui, acuto; pellucido-albā, fasciis latis fusco-nigricantibus conspicuē pictā.*

THE BLACK-BANDED BULIMUS. Shell ovate, somewhat ventricose, slightly umbilicated, whorls six in number, finely rudely striated, columella reflected, lip thin, sharp; transparent white, conspicuously painted with broad brownish-black bands.

PFEIFFER, MSS. Mus. Cuming.

Hab. Valley of the Magdalena, New Granada.

Distinguished by its broad dark bands.



370.



371.



372.



373.



374. a.



374. b.



375.



376.



377.



378.

G. B. S. del et lith.

R. B. & R. imp.

(increased one half.)

BULIMUS.

PLATE LVI.

Species 370. (Mus. Cuming.)

BULIMUS MERIDIONALIS. *Bul. testā ovato-conicā, umbilicatā, tenui, diaphanā, anfractibus septem, obliquè minutè rudè striatis, columellā peculiariter latè reflexā, labro tenui, acuto; pellucido-albā, zonā unicā fusciscente medio cingulalā,*

THE MERIDIONAL BULIMUS. Shell ovately conical, umbilicated, thin, diaphanous, whorls seven in number, obliquely minutely rudely striated, columella peculiarly broadly reflected, lip thin, sharp; transparent white, encircled round the middle with a pale brown zone.

PFEIFFER, Pro. Zool. Soc., 1847. p. 231.

Hab. South Africa.

The general aspect of this shell reminds one somewhat of an immature specimen of the *Achatina alabaster*.

Species 371. (Mus. Cuming.)

BULIMUS LIMONICUS. *Bul. testā elongatā, pyramidali, subumbilicatā, anfractibus septem, subrotundatis, concentricè subrudè rugoso-striatis, columellā reflexā, aperturā parviusculā, labro simplici; rufescente-corneā, lineolis albidis longitudinaliter plus minusve profusè notatā.*

THE MEADOW BULIMUS. Shell elongated, pyramidal, slightly umbilicated, whorls seven in number, somewhat rounded, concentrically rather rudely roughly striated, columella reflected, aperture rather small, lip simple; reddish horny, more or less profusely marked with whitish longitudinal lines.

D'ORBIGNY, Moll. Voy. dans l'Amér. Mérid. p. 284.

Hab. Bolivia; Bridges.

I have every reason to believe this to be the *B. limonici* of D'Orbigny.

Species 372. (Mus. Cuming.)

BULIMUS CINEREUS. *Bul. testā elongato-ovatā, umbilicatā, anfractibus septem ad octo, subrotundatis, lævibus aut concentricè striatis, columellā reflexā, aperturā parvā, labro simplici; pallidè cinereā, hic illic obliquè strigatā, apicem versus pellucido-corneā.*

THE ASH-COLOURED BULIMUS. Shell elongately ovate, umbilicated, whorls seven to eight in number, some-

what rounded, smooth or concentrically striated, columella reflected, aperture small, lip simple; pale ash-coloured, obliquely streaked here and there, transparent horny towards the apex.

Hab. Bolivia.

From a locality well examined by M. Alcide D'Orbigny, but not agreeing with any of the species described in his 'Voyage.'

Species 373. (Mus. Cuming.)

BULIMUS ELECTRUM. *Bul. testā oblongo-ovatā, tenui, pellucidā, subvitreā, vix umbilicatā, anfractibus sex, subinflatis, transversim minutè inciso-striatis, columellā reflexā, labro simplici, expanso; pellucido-luteā.*

THE AMBER BULIMUS. Shell oblong-ovate, thin, transparent, somewhat glassy, scarcely umbilicated, whorls six in number, slightly inflated, transversely minutely engraved with striæ, columella reflected, lip simple, expanded; transparent yellow.

Hab. Venezuela.

A delicate transparent shell of somewhat glassy texture, distinguished by its bright amber colour.

Species 374. (Mus. Cuming.)

BULIMUS TUMEFACTUS. *Bul. testā conico-ovatā, latè inflatā, peculiariter umbilicatā, anfractibus quinque ad sex, ultimo maximo, tumido, obliquè plicato-striatis, columellā peculiariter reflexā, labro tenui; pellucido-corneā, epidermide fusciscente hydrophanā, cingulum angustum punctaque perpauca intermittente, indutā.*

THE PUFFED BULIMUS. Shell conically ovate, broadly inflated, peculiarly umbilicated, whorls five to six in number, the last very large and swollen, obliquely plicately striated, columella peculiarly reflected, lip thin; transparent horny, covered with a light brown hydrophanous epidermis, leaving a narrow belt and a few small spots.

Hab. Great Bassam, West Africa.

A light horny shell of very peculiar form, distinguished by a second hydrophanous epidermis.

Species 375. (Mus. Dennison.)

BULIMUS CANTATUS. *Bul. testā subfusiformi-oblongā, basi subobliquè productā, umbilicatā, anfractibus sex ad septem, lævibus vel subobscurè rudè striatis, columellā medio incurvatā, aperturā basi sinuatā, labro expanso, subreflexo; pallidè spadiceo-albā, maculis parvis subquadratis distantibus indistinctè notatā, columellā labroque intus roseo-purpureis.*

THE CHARMED BULIMUS. Shell somewhat fusiformly oblong, somewhat obliquely produced at the base, umbilicated, whorls six to seven in number, smooth or rather obscurely rudely striated, columella curved inwards in the middle, aperture sinuated at the base, lip expanded, partially reflected; light fawn-white, indistinctly marked with small squarish distant spots, lip and columella coloured interiorly with rose-purple.

Hab. — ?

A very characteristic new species from the collection of J. Dennison Esq.

Fig. 376. (Mus. Cuming.)

neglectus
(Pfeiffer)

BULIMUS OBLITUS. *Bul. testā cylindraneo-elongatā, umbilicatā, anfractibus novem, ad suturas peculiariter crenulatis, deinde obscurè obliquè corrugato-striatis, columellā latè reflexā, uniplicatā, aperturā parvā, labro paululum expanso; pellucido-albā, olivaceo-luteo tinctā.*

THE FORGOTTEN BULIMUS. Shell cylindrically elongated, umbilicated, whorls nine in number, peculiarly crenulated beneath the sutures, then obscurely obliquely striated in a wrinkled manner, columella broadly reflected, with a single plait, aperture small, lip a little expanded; transparent white, tinged with olive-yellow.

Hab. Brazil.

Allied in form to the *B. Janeirensis*, but distinguished amongst other characters by the finely beaded crenulations beneath the sutures.

Species 377. (Mus. Cuming.)

BULIMUS PAZIANUS. *Bul. testā pyramidal-oblongā tenui, diaphanā, vix umbilicatā, anfractibus sex, lævibus, columellā reflexā, labro simplici, acuto; corneo-albidā, lineis strigisque fuscis longitudinaliter pictā.*

PAZ' BULIMUS. Shell pyramidally oblong, thin, diaphanous, scarcely umbilicated, whorls six in number, smooth, columella reflected, lip simple, sharp; horny white, longitudinally painted with brown lines and streaks.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 286. pl. 32. f. 10, 11.

Hub. Bolivia; D'Orbigny. Guatemala; Sallé.

A delicate transparent shell, well characterized by its linear painting.

Species 378. (Mus. Cuming.)

BULIMUS CALIFORNICUS. *Bul. testā subacuminato-ovatā, tenuiculā, vix umbilicatā, anfractibus sex, lævibus, columellā reflexā, labro simplici; lacteā, zonulis interruptis transversis cæruleo-nigricantibus cingulatā.*

THE CALIFORNIAN BULIMUS. Shell somewhat acuminate ovate, rather thin, scarcely umbilicated, whorls six in number, smooth, columella reflected, lip simple; cream colour, encircled with interrupted transverse blue-black zones.

Hab. California; Hartweg.

There is little novelty in the character or general aspect of this species, but it is certainly distinct.



380.



381.



382.



383.



384.



386.



385.



387. a.



387. b.



388.

BULIMUS.

PLATE LVII.

Species 380. (Mus. Cuming.)

BULIMUS TRICINCTUS. *Bul. testá acuminato-ovatá, umbilicatá, anfractibus septem, lævibus vel obscure rudè striatis, aperturá parvâ, labro simplici; cæruleo-albidâ, ustulato-fuscescente longitudinaliter lineatâ et strigatâ, zonulis tribus nigricantibus basi conspicuè pictâ.*

THE THREE-GIRT BULIMUS. Shell acuminate ovate, umbilicated, whorls seven in number, smooth or obscurely rudely striated, aperture small, lip simple; bluish-white, longitudinally lined and streaked with burnt-brown, painted in a conspicuous manner at the base with three blackish zones.

Hab. — ?

The three dark zones which encircle the lower portion of the whorls are concealed in all but the last.

Species 381. (Mus. Cuming.)

BULIMUS ERUBESCENS. *Bul. testá pyramidal-oblongâ, vix umbilicatâ, anfractibus sex, lævibus, transversim sub lente minutè inciso-striatis, columellâ tenuiter reflexâ, labro simplici, acuto; roseo-lutescente, apice rosaceo.*

THE BLUSHING BULIMUS. Shell pyramidal oblong, scarcely umbilicated, whorls six in number, smooth, transversely minutely striated in an engraved manner beneath the lens, columella finely reflected, lip simple, sharp; pinkish yellow, apex pink.

PFEIFFER, Pro. Zool. Soc., 1847. p. 112.

Hab. — ?

THE name *erubescens* has been used by Swainson in reference to the *B. gonistoma*, associated with *Gonistoma* as a generic word, but never with *Bulimus*.

Species 382. (Mus. Cuming.)

BULIMUS CHRYSALIS. *Bul. testá ovato-turritâ, subcylindraceâ, sub-umbilicatâ, anfractibus rotundatis, obliquè rugoso-striatulis, columellâ latè reflexâ, aperturâ fere rotundâ, labro tenui; intensè purpureo-fuscâ.*

THE CHRYSALIS BULIMUS. Shell ovately turreted, somewhat cylindrical, slightly umbilicated, whorls rounded, obliquely finely roughly striated, columella broadly reflected, aperture nearly round, lip thin; deep purple-brown.

Hab. Guadeloupe.

Of a cylindrically turreted form and deep purplish brown hue.

Species 383. (Mus. Cuming.)

BULIMUS SOWERBYI. *Bul. testá ovato-conicâ, tenui, sub-inflatâ, umbilicatâ, anfractibus sex, lævibus, infra medium subattenuatis, columellâ latè reflexâ, labro tenui, simplici; albidâ, strigis fuscis obliquis pictâ, strigis aliis fuscis rectis, medio terminantibus decussatâ, zonulâ nigricante unicâ prope basin.*

SOWERBY'S BULIMUS. Shell ovately conical, thin, somewhat inflated, umbilicated, whorls six in number, smooth, slightly attenuated below the middle, columella broadly reflected, lip thin, simple; whitish, painted with oblique brown streaks, crossed with other straight brown streaks terminating in the middle, near the base in a single blackish zone.

PFEIFFER, Pro. Zool. Soc., 1846. p. 114.

Hab. Andes of Columbia.

The double painting of straight lines crossing the oblique on the upper half of the whorls is a very peculiar feature in this shell.

Species 384. (Mus. Cuming.)

BULIMUS STUDERI. *Bul. testâ oblongâ, subcylindraceâ, umbilicatâ, anfractibus sex, lævibus, columellâ reflexâ, labro simplici, paululum expanso; flavicante-albâ, fasciis duabus roseis cingulatâ.*

STUDER'S BULIMUS. Shell oblong, somewhat cylindrical, umbilicated, whorls six in number, smooth, columella reflected, lip simple, a little expanded; yellowish-white, encircled with two pink bands.

PFEIFFER, Pro. Zool. Soc., 1846. p. 112.

Hab. Merida, New Granada.

The two pink bands which encircle the whorls of this shell upon a shining white ground, are very characteristic.

Species 385. (Mus. Cuming.)

BULIMUS PRIMULA. *Bul. testâ oblongâ, subcylindraceâ, umbilicatâ, anfractibus sex, lævibus vel obliquè subtiliter striatis, columellâ latè reflexâ, labro simplici; albidâ, luteo hic illic vividè tinctâ, zonis latis pallidè roseis cingulatâ, apice purpureo-fuscâ.*

THE PRIMROSE BULIMUS. Shell oblong, somewhat cylindrical, umbilicated, whorls six in number, smooth or obliquely finely striated, columella broadly reflected, lip simple; whitish, here and there brightly coloured with yellow, encircled with broad pink zones, apex purple-brown.

Hab. Merida, New Granada.

A prettily painted species from the same locality as the preceding, differing slightly, but importantly, in form. The whorls are somewhat more ventricose, and the reflected portion of the columella more appressed.

Species 386. (Mus. Cuming.)

BULIMUS MERIDANUS. *Bul. testā fusiformi-oblongā, subumbilicatā, spirā acuminatā, anfractibus septem, lævibus, nitentibus, sub lente transversim minutè impresso-striatis, columellā reflexā, labro simplici; albidā, luteo et roseo eximie tinctā, fasciis pallide purpureis interruptis cingulatā.*

THE MERIDA BULIMUS. Shell fusiformly oblong, slightly umbilicated, spire acuminate, whorls seven in number, smooth, shining, engraved beneath the lens with minute transverse striæ, columella reflected, lip simple; whitish, delicately tinged with rose and yellow, and encircled with interrupted pale purple bands.

PFEIFFER, Pro. Zool. Soc., 1846. p. 33.

Hab. Merida, New Granada.

Similarly delicately painted to the last two species from the same locality, but of very different form.

Species 387. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS LIQUABILIS. *Bul. testā ovato-conicā, ventricosā, umbilicatā, anfractibus sex ad septem, subrotundatis, lævibus vel minutissimè striatis, columellā latè reflexā, labro tenui, paululum expanso; pellucido-corneā, strigis longitudinalibus opacis notatā.*

THE DISSOLVABLE BULIMUS. Shell ovately conical, ventricose, umbilicated, whorls six to seven in number, somewhat rounded, smooth or very minutely striated, columella broadly reflected, lip thin, a little expanded; transparent horny, marked with opake streaks.

Hab. Texas; Sallé.

An inflated ovate shell, quite transparent except where ornamented with longitudinal opake streaks.

Species 388. (Mus. Cuming.)

BULIMUS CONNIVENS. *Bul. testā pyramidal-conicā, solidiusculā, ampliter umbilicatā, anfractibus septem, obliquè creberrimè plicato-striatis, columellā latè expansā, aperturā rotundatā, labro expanso, paululum reflexo; opaco-albā, nitente, aperturæ fauce aurantiā.*

THE DISSEMBLING BULIMUS. Shell pyramidally conical, rather solid, largely umbilicated, whorls seven in number, obliquely closely plicately striated, columella broadly expanded, aperture rounded, lip expanded, a little reflected; opake white, shining, interior of the aperture saffron-orange.

Hab. Senegal.

This shell obtains a pyramidal form from the last whorl being widely convoluted and leaving a large umbilicus.



328.



389 a.



389 b.



390 a.



390 b.



390 c.



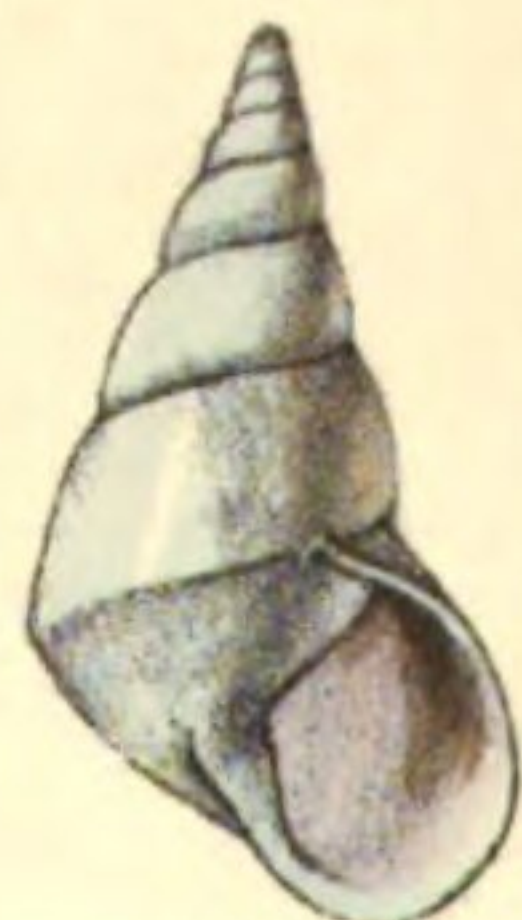
391.



393.



392.



394.

BULIMUS.

PLATE LVIII.

Species 328. (Mus. Cuming.)

BULIMUS MOZAMBICENSIS. *Bul. testā ovato-conicā, sub-turritā, subumbilicatā, anfractibus sex ad septem, lævibus, columellā latè reflexā, aperturā parviusculā, labro simplici; albā, anfractuum parte superiori lineis fuscis brevibus obliquè pictā, medio lineā nigrā cingulatā, parte inferiori immaculatā.*

THE MOZAMBIQUE BULIMUS. Shell ovately conic, somewhat turreted, slightly umbilicated, whorls six to seven in number, smooth, columella broadly reflected, aperture rather small, lip simple; white, upper part of the whorls painted with short oblique brown lines, encircled round the middle with a black line, lower part unspotted.

PFEIFFER, Symbolæ, vol. iii. p. 85.

Hab. Mozambique.

The painting of this species affords a character in being marked only above the line which encircles the whorl at the sutures.

Species 389. (Mus. Cuming.)

BULIMUS ZIEGLERI. *Bul. testā oblongo-conicā, semi-pelucidā, vix umbilicatā, anfractibus sex, obscure tenuissimè decussatim striatis, labro simplici; luteo-albidā, sæpè fasciis castaneis maculoso-interruptis cingulatā.*

ZIEGLER'S BULIMUS. Shell oblong conical, semitransparent, slightly umbilicated, whorls six in number, obscurely very finely decussately striated, lip simple; yellowish white, frequently encircled with chesnut bands broken up into square spots.

PFEIFFER, Pro. Zool. Soc., 1846. p. 113.

Hab. Central America.

The spots arising out of the interrupted character of the bands are disposed obliquely.

Species 390. (Fig. 390 a, b, c, Mus. Dyson.)

BULIMUS CURIANENSIS. *Bul. testā elongato-oblongā, subcylindraccā, basi obtusè angulatā et ampliter umbilicatā, anfractibus septem ad octo, plano-convexis, lævibus vel minutissimè striatis, columellā latè reflexā, aperturā latè expansā, non reflexā, basi attenuatā, subcanaliculatā; griseo-albidā, fasciis cæruleo-nigricantibus interdum cingulatā, umbilico interdum intense castaneo, labro intus roseo.*

THE CURIANA BULIMUS. Shell elongately oblong, somewhat cylindrical, obtusely angled at the base and largely umbilicated, whorls seven to eight in number, flatly convex, smooth or very minutely striated, columella broadly reflected, aperture widely expanded, not reflected, attenuated and slightly channelled at the base; greyish-white, sometimes encircled with blue-black bands, umbilicus sometimes very dark chesnut, lip pink within.

Hab. Curiana, Venezuela (on the leaves of Palms); Dyson.

One of the most interesting of the many beautiful species of shells collected by Mr. Dyson during his recent expedition to Venezuela. It is very closely allied to *B. Knorri*, but may be readily distinguished by its abrupt angular growth at the base, and large umbilicus.

Species 391. (Mus. Cuming.)

BULIMUS HUMBOLDTII. *Bul. oblongo-conicā, subventricosā, umbilicatā, suturis impressis, anfractibus septem, subrotundatis, lævibus, politis, columellā latè reflexā, labro simplici; porcellaneo-albā, fasciis castaneis tribus, peculiariter tenuè interruptis, infernè cingulatā.*

HUMBOLDT'S BULIMUS. Shell oblong-conic, somewhat ventricose, umbilicated, sutures impressed, whorls seven in number, rather rounded, smooth, polished, columella broadly reflected, lip simple; porcelain white, encircled round the lower part with three peculiarly finely interrupted chesnut bands.

Bulimus Mexicanus, Valenciennes (not of Lamarck) in Humb. Voy. Zool. vol. ii. p. 247. pl. 56. f. 1.

Hab. Mexico; Humboldt.

This shell, an authentic specimen of Humboldt's species, received by Mr. Cuming from Paris, is essentially distinct from Lamarck's *B. Mexicanus* (Pl. XL. Sp. 244), though resembling it in general aspect.

Species 392. (Mus. Dyson.)

BULIMUS ERECTUS. *Bul. testā pyramidal-oblongā, umbilicatā, spirā acuminatā, suturis impressis, anfractibus subrotundatis, longitudinaliter rudè striatis; columellā latè reflexā, labro tenui, simplici; pellucido-corneā.*

THE ERECT BULIMUS. Shell pyramidally oblong, umbilicated, spire acuminate with the sutures impressed,

January, 1849.

whorls somewhat rounded, longitudinally rudely striated, columella broadly reflected, lip thin, simple; transparent horny.

Hab. Curiana, Venezuela (on *Cacti*); Dyson.

Of a uniform horn colour with a peculiarly erect spire.

Species 393. (Mus. Dyson.)

BULIMUS CACTICOLUS. *Bul. testā acuminato-oblongā, sub-ventricosā, tenuissimā, umbilicatā, anfractibus septem, subrotundis, obscurè decussatim striatis, columellā reflexā, labro tenui, simplici; pellucido-corneā.*

THE CACTUS-INHABITING BULIMUS. Shell acuminate oblong, somewhat ventricose, very thin, umbilicated, whorls seven in number, somewhat rounded, obscurely decussately striated, columella reflected, lip thin, simple; transparent horny.

Hab. Curiana, Venezuela (on *Cacti*); Dyson.

Very similar to the last in colour and substance, but sufficiently distinguished in form.

Species 394. (Mus. Cuming.)

BULIMUS OPALINUS. *Bul. testā pyramidalī, basi angulatā et subplanatā, vix umbilicatā, anfractibus octo, plano-convexis, minutissimè decussatim striatis, columellā reflexā, labro paululum reflexo; opalino-albā, immaculatā.*

THE OPAL BULIMUS. Shell pyramidal, angulated and slightly flattened at the base, scarcely umbilicated, whorls eight in number, flatly convex, very minutely decussately striated, columella reflected, lip a little reflected; opal white, unspotted.

SOWERBY, Beechey's Voyage, p. 144. pl. 138. f. 8.

Hab. Brazil.

Distinguished by its acuminate Trochiform growth and pure opal white substance.

Bulimus, Pl. LIX.



395.



396. a



396.



397.



398.



399.



400.



401.



402.



403.

BULIMUS.

PLATE LIX.

Species 395. (Mus. Cuming.)

BULIMUS RUFO-NIGER. *Bul. testā conico-turritā, umbilicatā, anfractibus septem, rotundatis, obliquè irregulariter striatis, aperturā subrotundā, labro simplici; nigricante-castaneā.*

THE RED-BLACK BULIMUS. Shell conically turreted, umbilicated, whorls seven in number, rounded, obliquely irregularly striated, aperture nearly round, lip simple; blackish chesnut.

FERUSSAC (?)

Hab. Madagascar.

Of a peculiar dark chesnut reddish hue.

Species 396. (Mus. Cuming.)

BULIMUS CASTRENSIS. *Bul. testā conico-oblongā, umbilicatā, anfractibus septem, lævibus, columellā reflexā, labro simplici; albidā, strigis cæruleo-viridibus albi-denticulatis, maculis oblongis opaco-albis peculiariter notatā.*

THE CAMP-MARKED BULIMUS. Shell conically oblong, umbilicated, whorls seven in number, smooth, columella reflected, lip simple; whitish, peculiarly marked with bluish green streaks denticulated with white, and opaque white oblong spots.

PFEIFFER, Pro. Zool. Soc., 1846, p. 115.

Hab. — ?

It is only by reference to the figure that it is possible to form an adequate idea of the singular painting of this species.

Species 397. (Mus. Cuming.)

BULIMUS TRILINEATUS. *Bul. testā cylindræo-oblongā, imperforatā, anfractibus sex, longitudinaliter subtiliter plicato-rugatis, columellā angustā, labro simplici; griseo-albicante, strigis tenuibus fuscis longitudinalibus plus minusve densè ornatā, aperturæ fauce castaneo-fuscā.*

THE TRILINEATED BULIMUS. Shell cylindrically oblong, not umbilicated, whorls six in number, longitudinally finely plicately wrinkled, columella narrow, lip simple; greyish white, more or less thickly ornamented with fine brown longitudinal streaks, interior of the aperture chesnut-brown.

Helix trilineata, Quoy, Voy. de l'Astrol. vol. ii. p. 107. pl. 9. f. 1 to 3.

Hab. Port George, New Holland.

The painting of this species is probably variable in its character, as the specific name given to it by M. Quoy does not strictly apply to the specimen here figured.

Species 398. (Mus. Cuming.)

BULIMUS NITELINUS. *Bul. testā oblongo-ovatā, ad basin subattenuatā, vix umbilicatā, anfractibus quinque ad sex, lævibus, medio tumidiusculis, columellā paululum reflexā, labro simplici; albidā, roseo-aurantio tinctā, fasciis maculisque nigricantibus, remotè interruptis, ornatā, aperturā roseā.*

THE GOLD-TINGED BULIMUS. Shell oblong-ovate, slightly attenuated at the base, scarcely umbilicated, whorls five to six in number, smooth, rather swollen in the middle, columella a little reflected, lip simple; whitish, tinged with rose-orange, ornamented with remotely interrupted spots and bands, aperture pink.

Hab. Mexico.

Of a warm rose-orange tint, peculiarly marked, though not of very novel aspect.

Species 399. (Mus. Cuming.)

BULIMUS DETRITUS. *Bul. testā cylindræo-oblongā, solidiusculā, vix umbilicatā, anfractibus septem, convexiusculis, ad suturas subtiliter crenulatis, columellā latè reflexā, aperturā parviusculā, labro subexpanso; sordidè albā, sæpè cinerascete longitudinaliter strigatā.*

THE WORN BULIMUS. Shell cylindrically oblong, rather solid, slightly umbilicated, whorls seven in number, rather convex, finely crenulated at the sutures, columella broadly reflected, aperture rather small, lip somewhat expanded; dead white, frequently longitudinally streaked with pale ash.

Helix detrita, Muller, Verm. vol. ii. p. 101.

Helix sepium, Gmelin.

Cochlogena radiata, Férussac.

Cochlogena dealbata, Férussac.

Bulimus melanorhinus, Jan.

Bulimus abbreviatus, Jan.

Bulimus luteus, Ziegler.

Hab. Central Europe.

January, 1849.

This well-known species is very generally distributed throughout Germany and other parts of Central Europe.

Species 400. (Mus. Cuming.)

BULIMUS HONDURASANUS. *Bul. testā subacuminato-oblongā, tenuiculā, umbilicatā, anfractibus sex, convexiusculis, lævibus, columellā latè reflexā, labro simplici; pellucido-flavescente, roseo-fusco trifasciatā.*

THE HONDURAS BULIMUS. Shell somewhat acuminate oblong, rather thin, umbilicated, whorls six in number, rather convex, smooth, columella broadly reflected, lip simple; transparent yellowish-white, encircled by three rose-brown bands.

PFEIFFER, Pro. Zool. Soc., 1846, p. 29.

Hab. Honduras; Dyson.

A very delicate transparent rose-tinged shell.

Species 401. (Mus. Cuming.)

BULIMUS SORDIDUS. *Bul. testā conico-ovatā, tenui, subampliter umbilicatā, anfractibus sex ad septem, rotundatis, creberrimè fortiter elevato-striatis, columellā latè expansā, vix reflexā, labro tenui, simplici; sordide fuscā.*

THE SORDID BULIMUS. Shell conically ovate, thin, rather largely umbilicated, whorls six to seven in number, rounded, very closely strongly elevatedly striated, columella broadly expanded, scarcely reflected, lip thin, simple; dull brown.

Helix sordida, Lesson, Voyage de la Coquille, p. 315. pl. 13. f. 3.

Hab. Environs of Lima.

It has been supposed that Mr. Broderip's *Bulimus Proteus* is the *B. sordidus* of Lesson; but Dr. Pfeiffer has shown it to be a distinct species, as the authentic specimen here figured, obtained by Mr. Cuming from those collected

by M. Lesson, sufficiently verifies. The name *sordidus* applied to Sp. 100, must therefore be cancelled in favour of Mr. Broderip's very significant title of *Proteus*.

Species 402. (Mus. Cuming.)

BULIMUS CONSTRICTUS. *Bul. testā subcylindraceo-ovatā, solidiusculā, profundè umbilicatā, spiræ suturis impressis, anfractibus septem, convexis, tenuissimè striatis, columellā latè expansā, aperturā parviusculā, subreflexā; opaco-albā.*

THE CONSTRICTED BULIMUS. Shell somewhat cylindrically ovate, rather solid, deeply umbilicated, sutures of the spire impressed, whorls seven in number, convex, very finely striated, columella broadly expanded, aperture rather small, with the lip a little reflected; opaque white.

PFEIFFER, Symbolæ. vol. i. p. 43.

Bulimus Angosturensis, Gruner.

Hab. Angostura.

Dr. Pfeiffer describes this species as having a horny epidermis.

Species 403. (Mus. Cuming.)

BULIMUS SPRATTII. *Bul. testā subgloboso-ovatā, solidiusculā, turgidā, umbilicatā, anfractibus sex, longitudinaliter ruguloso-plicatis, columellā latè expansā, labro subreflexo; albidā, epidermide tenui corneā olivaceā partim indutā.*

SPRATT'S BULIMUS. Shell somewhat globosely ovate, rather solid, swollen, umbilicated, whorls six in number, longitudinally rather roughly plicated, columella broadly expanded, lip slightly reflected; whitish, partially covered with a thin horny olive epidermis.

PFEIFFER, in Phil. Abbild., *Bulimus*, pl. 4. f. 6.

Hab. Asia Minor, Pisidia; Forbes. Lycia; Spratt.

A turgid delicately plicated species of very distinct form.



404.



405.



406.



407.



408.



409.



410.



411.



412.



413.

BULIMUS.

PLATE LX.

Species 404. (Mus. Cuming.)

BULIMUS CANTORII. *Bul. testā oblongo-cylindraceut, solidiusculā, compressē umbilicatā, anfractibus octo, perobliquē tenuissimē striatis, columellā concavo-expansā, aperturā suborbiculari, labro plano-reflexo; pellucido-corneā, labro albido.*

CANTOR'S BULIMUS. Shell obliquely cylindrical, rather solid, compressly umbilicated, whorls eight in number, very obliquely finely striated, columella concavely expanded, aperture nearly orbicular, lip flatly reflected; transparent horny, lip whitish.

PHILIPPI, Zeitschr. fur Mal. 1844. p. 165.

Hab. Environs of Nanking, China.

Although of a subtransparent horny substance, it is rather a stout shell.

Species 405. (Mus. Cuming.)

BULIMUS ROSSMASSLERI. *Bul. testā acuminato-oblongā, subcylindraceut, compressē umbilicatā, anfractibus octo, obliquē creberrimē plicato-striatis, columellā concavo-expansā, callositate parvā supernē munitā, aperturā parvā, labro subexpanso; supernē fuscā, infernē sordidē albā.*

ROSSMASSLER'S BULIMUS. Shell acuminate oblong, slightly cylindrical, compressly umbilicated, whorls eight in number, obliquely very closely plicately striated, columella concavely expanded, furnished at the upper part with a small callosity, aperture small, lip slightly expanded; brown at the upper part, dull white about the lower.

PFEIFFER, Pro. Zool. Soc., 1846. p. 113.

Hab. Asia Minor.

It appears to be a general character in the species, to present the above recorded contrast of colour.

Species 406. (Mus. Cuming.)

BULIMUS SYRIACUS. *Bul. testā oblongo-cylindraceut, compressē umbilicatā, spiræ suturis lineari-sulcatis, anfractibus septem ad octo, planulatis, parum convexis, columellā indistinctē uniplicatā, aperturā orbiculari, labro plano-reflexo; griseo-albicante, apice fusco, labro albo.*

THE SYRIAN BULIMUS. Shell oblong-cylindrical, compressly umbilicated, sutures of the spire linearly

grooved, whorls seven to eight in number, flattened, but little convex, columella indistinctly one-plaited, aperture orbicular, lip flatly reflected; greyish white, apex brown, lip white.

PFEIFFER, Symbolæ, vol. iii. p. 88.

Hab. Syria.

Distinguished among other characters by the flattened and closely appressed volution of the whorls.

Species 407. (Mus. Cuming.)

BULIMUS LYCICUS. *Bul. testā cylindraceut-ovatā, subventricosā, vix umbilicatā, anfractibus sex ad septem, lævibus, nitidissimis, columellā obscurē uniplicatā, labro subincrassato, reflexo; corneo-lutescente, pellucido, labro albido.*

THE LYCIAN BULIMUS. Shell cylindrically ovate, rather ventricose, scarcely umbilicated, whorls six to seven in number, smooth, very shining, columella obscurely one-plaited, lip somewhat thickened, reflected; horny yellow, transparent, lip whitish.

PFEIFFER, Phil. Abbild. vol. ii. p. 113. pl. 4. f. 4.

Hab. Lycia; Spratt.

A comparatively stout shell, yet of such clear transparent substance that the axis of the columella may be seen throughout.

Species 408. (Mus. Cuming.)

BULIMUS CANDELARIS. *Bul. testā elongato-oblongā, sinistrali, subcylindraceut, compressē umbilicatā, anfractibus novem, plano-convexis, subrudē tenuistriatis, columellā concavo-expansā, aperturā parvā, labro expanso; sordidē albā, labro eburneo.*

THE CANDLE-LIKE BULIMUS. Shell elongately oblong, sinistral, somewhat cylindrical, compressly umbilicated, whorls nine in number, flatly convex, rather rudely finely striated, columella concavely expanded, aperture small, lip expanded; dead white, lip ivory white.

PFEIFFER, Pro. Zool. Soc., 1846. p. 40.

Hab. —?

Locality unknown, but probably on the confines of Europe and Asia.

Species 409. (Mus. Cuming.)

BULIMUS CARNEUS. *Bul. testā cylindraceā, vix umbilicatā, apice obtusā, anfractibus novem, plano-convexis, obliquè subobscurè striatis, columellā latè expansā, subplicatā, aperturā ferè semiorbiculari, labro subincrassato, conspicuè reflexo; corneā, pellucidā, nitidā, labro albo.*

THE FLESHY BULIMUS. Shell cylindrical, scarcely umbilicated, obtuse at the apex, whorls nine in number, flatly convex, obliquely somewhat obscurely striated, columella broadly expanded, slightly plaited, aperture nearly semiorbicular, lip rather thickened, conspicuously reflected; horny, transparent, shining, lip white.

PFEIFFER, Philippi, Abbild. vol. ii. pl. 4. f. 5.

Hab. Lycia; Spratt.

This, like the *B. Lycicus* from the same locality, is a stout shell, although sufficiently transparent to show the axis of the columella.

Species 410. (Mus. Cuming.)

BULIMUS LABROSUS. *Bul. testā cylindraceā, tumidā, solidiusculā, compressè umbilicatā, anfractibus sex ad septem, obscurè obliquè tenuistriatis, nitidis, columellā concavo-expansā, subplicatā, aperturā ferè orbiculari, labro incrassato, late reflexo, lirā callositate continuo; livido-fuscescente, subpellucidā, labro intensè lacteo.*

THE BROAD-BRIMMED BULIMUS. Shell cylindrical, swollen, rather solid, compressly umbilicated, whorls six to seven in number, obscurely obliquely finely striated, shining, columella concavely expanded, slightly plaited, aperture nearly orbicular, lip thickened, broadly reflected, continuous with a callous ridge; pale livid brown, somewhat transparent, lip dark cream-colour.

OLIVIER, Voy. Levant, vol. ii. p. 222. pl. 31. f. 10.

Cochlogena labrosa, Férussac.

Pupa labrosa, Lamarck.

Hab. Syria.

This fine species is remarkably characteristic of the semitransparent substance, cylindrical form, and dilated lip typical of the *Bulimi* of Syria and Asia Minor.

Species 411. (Mus. Cuming.)

BULIMUS EHRENBERGI. *Bul. testā abbreviato-cylindraceā, tumidiusculā, compressè umbilicatā, apice erecto-papillari, anfractibus septem ad octo, levibus, vix striatis, columellā labroque reflexis; sordidè cærulescente-albā.*

EHRENBERG'S BULIMUS. Shell abbreviately cylindrical, rather swollen, compressly umbilicated, apex erectly papillary, whorls seven to eight in number, smooth, slightly striated, lip and columella reflected; dull bluish-white.

PFEIFFER, Pro. Zool. Soc., 1846. p. 113.

Hab. Greece.

Of a stout cylindrical growth with the apex peculiarly erect and papillary.

Species 412. (Mus. Cuming.)

BULIMUS LABIOSUS. *Bul. testā acuminato-cylindraceā, solidiusculā, anfractibus octo, lævibus, politis, columellā latè expansā, subplicatā, aperturā ferè orbiculari, labro convexo-incrassato, latissimè reflexo, laminā callosā continuo; opalino-albā.*

THE WIDE-LIPPED BULIMUS. Shell acuminate cylindrical, rather solid, whorls eight in number, smooth, polished, columella broadly expanded, somewhat plaited, aperture nearly orbicular, lip convexly thickened, very broadly reflected, continuous by a callous lamina; clear opal white.

BRUGUIERE, Encyclopédie Méthodique, p. 347.

Helix labiosa, Muller.

Pupa Jehennei, Récluz.

Hab. Island of Socotra, Coast of Africa; Jehenne.

Distinguished by its solid clear opal-like substance.

Species 413. (Mus. Cuming.)

BULIMUS ALEPI. *Bul. testā oblongo-cylindraceā, compressè umbilicatā, anfractibus septem, obliquè tenuissimè striatis, columellā plano-expansā, subplicatā, aperturā ferè orbiculari, labro reflexo, callositatibus ferè continuo; corneo-albicante, subpellucidā, suturis opaco-albo marginatis, labro albo.*

THE ALEPPO BULIMUS. Shell oblong-cylindrical, compressly umbilicated, whorls seven in number, obliquely very finely striated, columella flatly expanded, somewhat plaited, aperture nearly orbicular, lip reflected, almost continuous with callosities; horny white, transparent, sutures edged with opaque white, lip white.

Cochlogena Alepi, Férussac, Prodrôme, p. 418.

Bulimus halepensis, Pfeiffer.

Hab. Environs of Aleppo, Syria.

Resembling the larger *B. labrosus*, both in aspect and general detail of character.



414.



415. a.



415. b.



416.



417.



418.



419.



420.



421.



422.

BULIMUS.

PLATE LXI.

Species 414. (Mus. Cuming.)

BULIMUS SARCODES. *Bul. acuminato-oblonga, tenui, subprofundè umbilicatâ, anfractibus sex ad septem, tenuissimè ruguloso-striatis, striis spiralibus tenuibus impressis sub lente decussatâ, columellâ reflexâ, labro simplici; pellucido-corneâ, incarnato tinctâ.*

THE FLESH-TINTED BULIMUS. Shell acuminate oblong, thin, somewhat deeply umbilicated, whorls six to seven in number, very finely rugosely striated, and decussated, beneath the lens, with delicate impressed striæ, columella reflected, lip simple; transparent, horny, tinged with flesh colour.

PFEIFFER, Pro. Zool. Soc., 1846. p. 30.

Hab. Honduras; Dyson.

An extremely delicate transparent shell.

Species 415. (Mus. Cuming.)

BULIMUS FASCIOLATUS. *Bul. oblongo-cylindraca, solidiusculâ, vix umbilicatâ, apice obtusâ, anfractibus septem, plano-convexis, striatulis, prope suturas minutissimè granulatis, columellâ breviter reflexâ, aperturâ parvisculâ, labro subexpanso; albidâ, fasciis longitudinalibus nigricante-fuscis interdum conspicuè pictâ, aperturæ fauce intensè castaneo-fuscâ.*

THE LITTLE-BANDED BULIMUS. Shell oblong-cylindrical, rather solid, scarcely umbilicated, obtuse at the apex, whorls seven in number, flatly convex, finely striated, very minutely granulated near the sutures, columella shortly reflected, aperture rather small, lip slightly expanded; whitish, conspicuously painted with longitudinal blackish-brown bands, interior of the aperture deep chesnut-brown.

OLIVIER, Voy. Levant, vol. i. p. 416. pl. 17. f. 5.

Cochlogena fasciolata, Férussac.

Pupa fasciolata, Lamarck.

Hab. Syria, Crete, Rhodes, &c.

The white variety, represented at Fig. 415 b, is still marked with faint longitudinal bands.

Species 416. (Mus. Cuming.)

BULIMUS HOHENACKERI. *Bul. testâ oblongo-cylindraca, solidiusculâ, vix umbilicatâ, anfractibus octo, plano-con-*

vexis, tenuissimè subgranuloso-striatis, columellâ labroque subexpansis; albâ, intus intensè nigricante-fuscâ.

HOHENACKER'S BULIMUS. Shell oblong-cylindrical, rather solid, scarcely umbilicated, whorls eight in number, flatly convex, very finely somewhat granulosely striated, lip and columella a little expanded; white, interior deep chesnut-brown.

KRYNICKI, in Bull. Moscow, vol. ix.

Bulimus xanthostoma, Hohenacker.

Hab. Georgia.

Closely resembling the white variety of the preceding species, especially in regard to the intense dark colouring of the interior.

Species 417. (Mus. Cuming.)

BULIMUS TOURNEFORTIANUS. *Bul. testâ elongato-turritâ, sinistrali, vix umbilicatâ, anfractibus duodecim, plano-convexis, lævibus vel obliquè minutè striatis, columellâ labroque subexpansis, tridentatis; albâ, aperturæ fauce aurantio-luteâ.*

TOURNEFORT'S BULIMUS. Shell elongately turreted, sinistral, scarcely umbilicated, whorls twelve in number, flatly convex, smooth or obliquely minutely striated, lip and columella a little expanded, three-toothed; white, interior of the aperture orange-yellow.

Cochlogena Tournefortiana, Férussac in Tournefort, Voy. Levant, vol. iii. p. 308.

Pupa tridentata, Lamarck.

Hab. Turkey in Europe.

The *Clausilia lævis* of De Blainville, quoted by Dr. Pfeiffer as synonymous with this species, differs in being less elongated and composed of fewer whorls.

Species 418. (Mus. Cuming.)

BULIMUS EBURNEUS. *Bul. testâ elongato-turritâ, non umbilicatâ, anfractibus novem, lævibus, politis, columellâ subreflexâ, labro simplici; eburneâ, intus luteo pallidè tinctâ.*

THE IVORY BULIMUS. Shell elongately turreted, not umbilicated, whorls nine in number, smooth, polished, columella a little reflected, lip simple; ivory white, interior tinged with yellow.

January, 1849.

PFEIFFER, Symbolæ, vol. ii. p. 44.

Hab. Turkey in Europe.

Of a smooth polished ivory aspect.

Species 419. (Mus. Cuming.)

BULIMUS FORSKALII. *Bul. testâ ventricosio-ovatâ, cylindraceo-Pupiformi, latè umbilicatâ, anfractibus octo, obliquè creberrimè elevato-striatis, columellâ uniplicatâ, aperturâ suborbiculari, labro latissimè expanso; pellucido-albâ, labro intus fulvo-sanguinea tincto.*

FORSKAL'S BULIMUS. Shell ventricosely ovate, cylindrically Pupa-shaped, widely umbilicated, whorls eight in number, obliquely very closely elevately striated, columella one-plaited, aperture nearly orbicular, lip very much expanded; transparent white, lip tinged within with fulvous-blood colour.

Bulimus Forskalii, Beck, Ind. p. 68.

Helix sulcata, Chemnitz.

Pupa candida, Lamarck.

Pupa arata, Récluz.

Hab. Arabia.

This species partakes very much of the character of *Pupa*.

Species 420. (Mus. Cuming.)

BULIMUS TAURICUS. *Bul. testâ cylindraceo-turritâ, solidiusculâ, compresso-umbilicatâ, anfractibus novem ad decem, planiusculis, subobscurè obliquè striatis, columellâ labroque dilatatis, aperturâ parviusculâ; albâ, aperturæ fauce aurantio-luteâ.*

THE TARTARY BULIMUS. Shell cylindrically turreted, rather solid, compressly umbilicated, whorls nine to ten in number, rather flattened, somewhat obscurely obliquely striated, lip and columella dilated, aperture rather small; white, interior of the aperture tinged with orange-yellow.

LANG, Pfeiffer, Monog. *Bul.* p. 226.

Bulimus lineatus, Rossmassler.

Bulimus obsoletus, Ziegler.

Bulimus fusiformis, Menke.

Hab. Tartary.

Very minutely striated beneath the lens.

Species 421. (Mus. Cuming.)

BULIMUS CYLINDRICUS. *Bul. testâ cylindraceo-oblongâ, sinistrali, tenuiculâ, vix umbilicatâ, anfractibus octo, convexis, obliquè striatis, columellâ expansâ, labro simplici; cærulescente-albâ, aperturæ fauce lutescente tinctâ.* *cymatilis*

THE CYLINDRICAL BULIMUS. Shell cylindrically oblong, sinistral, rather thin, scarcely umbilicated, whorls eight in number, convex, obliquely striated, columella expanded, lip simple; bluish white, interior of the aperture faintly tinged with yellow.

MENKE, MSS.

Hab. — ?

The apex of this reversed species has a somewhat papillary aspect.

Species 422. (Mus. Cuming.)

BULIMUS DARDANUS. *Bul. testâ acuminato-turritâ, vix umbilicatâ, anfractibus octo ad novem, convexis, obliquè striatis, columellâ reflexâ, aperturâ obliquè semiovali, labro simplici; albidâ, incarnato-fusco obscurè tinctâ et strigatâ, aperturæ fauce saturatiore.*

THE TROJAN BULIMUS. Shell acuminately turreted, scarcely umbilicated, whorls eight to nine in number, convex, obliquely striated, columella reflected, aperture obliquely semi-oval, lip simple; whitish, obscurely stained and streaked with flesh-tinted brown, interior of a rather darker colour.

Hab. Asia Minor, Turkey in Europe.

Of a more acuminated, less cylindrical form than most of the allied species.



423.



424.



425.



427. a.



426. a.



426. b.



427. b.



428.



429.



430.

BULIMUS.

Plate LXII.

Species 423. (Mus. Cuming.)

BULIMUS PALLENS. *Bul. testā conico-ovatā, tenuiculā, anfractibus quinque ad sex, sub lente tenuissimè obliquè striatis, striis subtilissimis impressis spiralibus exsculptis, anfractu ultimo medio subangulato, columellā tenui, angustā, labro simplici; pallidè stramineā.*

THE PALE BULIMUS. Shell conically ovate, rather thin, whorls five to six in number, beneath the lens very finely obliquely striated, and sculptured with very fine impressed spiral striæ, last whorl slightly angled in the middle, columella thin, narrow, lip simple; pale straw-colour.

JONAS, MSS. Mus. Cuming.

Hab. — ? *Guinea*

This has very much the appearance of an immature shell, and is published with some doubt.

Species 424. (Mus. Cuming.)

BULIMUS FERRUGINEUS. *Bul. testā conico-ovatā, umbilicatā, anfractibus rotundatis, lævibus, columellā labroque simplicibus; albidā, rufo-fusco concentricè strigatā, et ad basin spiraliter interruptè fasciatā.*

THE RUSTY BULIMUS. Shell conically ovate, umbilicated, whorls rounded, smooth, lip and columella simple; whitish, concentrically streaked with reddish-brown, and spirally banded at the base in an interrupted manner.

Hab. Peru.

An interesting little species, distinguished by a very characteristic style of painting.

Species 425. (Mus. Cuming.)

BULIMUS DYSONI. *Bul. testā ovato-turritā, minutè umbilicatā, anfractibus sex ad septem, rotundatis, irregulariter tenuistriatis, columellā reflexā, labro simplici; fusco-corneā, semipellucidā.*

DYSON'S BULIMUS. Shell ovately turreted, minutely umbilicated, whorls six to seven in number, rounded, irregularly finely striated, columella reflected, lip simple; brown horny colour, semitransparent.

PFEIFFER, Pro. Zool. Soc., 1846, p. 39.

Hab. Honduras.

A bright brown pellucid shell in which the columella is visible throughout.

Species 426. (Mus. Benson.)

BULIMUS KUNAWURENSIS. *Bul. testā elongato-turritā, sinistrorsā, compressè umbilicatā, anfractibus duodecim, lævibus, aut obscurè ruguloso-striatis, ad suturas minutè crenulatis, aperturā parvā, columellā labroque expansis; fuscescente-corneā, strigis opacis hic illic notatā, labro intus niveo.*

THE KUNAWUR BULIMUS. Shell elongately turreted, sinistral, compressly umbilicated, whorls twelve in number, smooth, or obscurely roughly striated, minutely crenulated at the sutures, aperture small, lip and columella expanded; brownish horny colour, marked here and there with opaque white streaks, lip snow-white within.

HUTTON, MSS.

Hab. Kunawur, India.

I am indebted for this characteristic Indian species to Mr. Benson, and for the information that it was collected by Capt. Hutton at Chini in Kunawur on the bank of the river Sutlej, before it passes through the snowy range of the Himalaya.

Species 427. (Fig. *a* and *b*, Mus. Cuming.)

BULIMUS IRRORATUS. *Bul. testā acuminato-oblongā, medio ventricosā, anfractibus sex, subrotundatis, striis tumidis elevatis interruptis obliquè exsculptis, infra suturas peculiariter concentricè crenulatis, columellā strictè uniplicatā; rufescente-purpureā, anfractu ultimo epidermide tenui cinerascete, maculis fulvo-albidis, fusco-umbratis aspersā, induto, columellā cærulescente-albā, labro incarnato-roseo.*

THE BEDEWED BULIMUS. Shell acuminate oblong, ventricose in the middle, whorls six in number, somewhat rounded, obliquely sculptured with swollen raised interrupted striæ, and peculiarly concentrically crenulated beneath the sutures, columella strictly one-plaited; reddish purple, last whorl covered with a pale ash epidermis, sprinkled with brown-shaded fulvous white spots, columella bluish-white, lip flesh-pink.

REEVE, Pro. Zool. Soc., 1849.

Hab. Brazil? New Granada?

Mr. Cuming is indebted for this beautiful new species

March, 1849.

to the liberality of A. L. Gubba, Esq., of Havre. It is of a swollen ovate form with the spire rather sharply acuminate, and the columella is distinguished by a sharp winding plait. The ground colour of the shell is a reddish purple, the last whorl being particularly characterized by a thin ash-coloured epidermis, sprinkled with light fulvous spots, all inclining towards the lip which is of a delicate flesh-pink.

Species 428. (Mus. Cuming.)

BULIMUS LINEATUS. *Bul. testā acuminato-conicā, sub-umbilicatā, anfractibus septem, lævibus, sub lente minutè striatis, columellā latè reflexā, aperturā subobliquā, labro paululum reflexo; albidā, cinnamomeo-fuscescente obliquè lineatā et strigatā, labro niveo.*

THE LINEATED BULIMUS. Shell acuminately conical, slightly umbilicated, whorls seven in number, smooth, minutely striated beneath the lens, columella broadly reflected, aperture rather oblique, lip a little reflected; whitish, obliquely lineated and streaked with light cinnamon brown, lip snow-white.

SPIX, Test. Bras. p. 8. pl. 7. f. 6.

Hab. Brazil.

Not much unlike the *B. cinnamomeo-lineatus* in general appearance.

Species 429. (Mus. Cuming.)

BULIMUS PSEUDO-SUCCINEA. *Bul. testā subfusiformi-oblongā, tenuissimā, vitreā, pellucidā, anfractibus quin-*

que ad sex, subtilissimè striatulis, ultimo inflato, patulo, columellā labroque tenuibus, simplicibus; stramineo-corneā.

THE FALSE-SUCCINEA BULIMUS. Shell somewhat fusiformly oblong, very thin, glassy, transparent, whorls five to six in number, very finely and delicately striated, last whorl inflated, wide open, lip and columella thin, simple; pale straw horn-colour.

POTIEZ and MICHAUD, Gal. de Douai, vol. i. p. 140. pl. 13. f. 5. 6.

Helix pseudo-Succinea, Moricand.

Hab. Bahia, Brazil.

An extremely transparent glassy shell of a delicate pale straw-colour.

Species 430. (Mus. Cuming.)

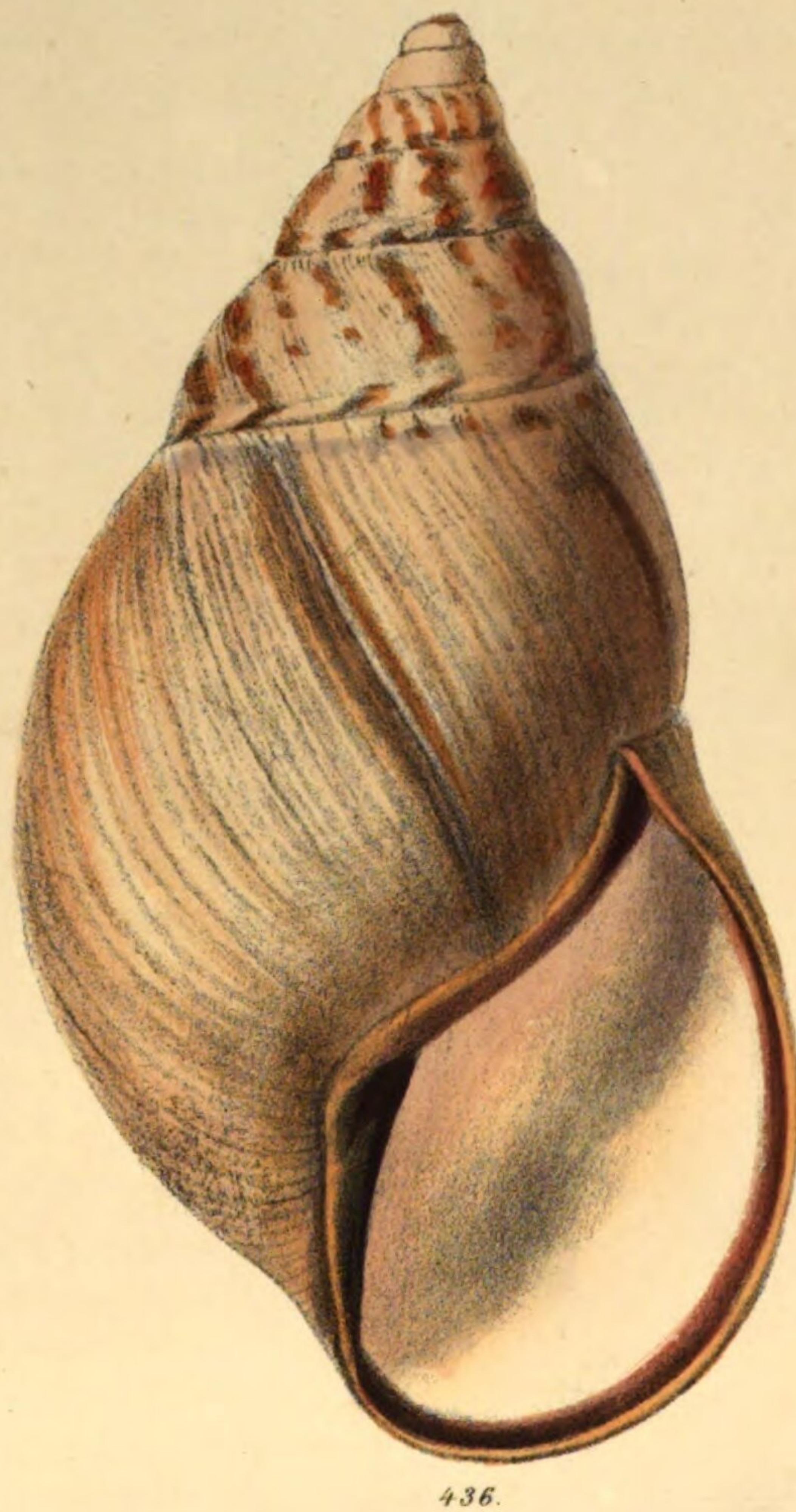
BULIMUS NATALENSIS. *Bul. testā angulato-conicā, Trochiformi, anfractibus sex, obliquè striatis, ultimo angulato-productis, columellā subincrassatā, labro simplici; fulvā, nitente, nigro-fusco conspicuè fasciatā.*

THE NATAL BULIMUS. Shell angularly conical, Trochus-shaped, whorls six in number, obliquely striated, last whorl angularly produced, columella rather thickened, lip simple; fulvous, shining, conspicuously banded with black-brown.

KRAUSS, Sudafrikanischen Moll. p. 71. pl. 5. f. 1.

Hab. Port Natal, South Africa.

A light semitransparent trochiform shell, conspicuously dark-banded at the sutures and round the middle of the last whorl.



BULIMUS.

PLATE LXIII.

Species 431. (Mus. Cuming.)

BULIMUS PUPA. *Bul. testā cylindraceo-oblongā, vix umbilicatā, anfractibus septem, obscure rudē striatis, aperturā parviusculā, labro subexpanso; pellucido-corneā, labro albo.*

THE PUPA BULIMUS. Shell cylindrically oblong, scarcely umbilicated, whorls seven in number, obscurely rudely striated, aperture rather small, lip a little expanded; transparent horny, lip white.

BRUGUIERE, Enc. Méth. vol. i. p. 349.

Helix pupa, Linnæus.

Varietates (fide Pfeiffer).

Bulimus tuberculatus, Turton.

Bulimus emarginatus, Deshayes.

Bulimus Babauchii, Anton.

Bulimus labiatus, Ziegler.

Pupa primitiva, Menke.

Hab. Sicily, the Morea, Algeria, the Canary Islands, &c.

This species is not found in Britain or Central Europe.

Species 432. (Mus. Cuming.)

BULIMUS LEUCODON. *Bul. testā subelongato-turritā, vix umbilicatā, anfractibus novem, obliquē creberrimē impresso-striatis, aperturā parvā, subquadratā, marginibus junctis, labro dente valido interno, extus scrobiculum formante, medio conspicuē munito; olivaceo-corneā, dente labroque albidis.*

THE WHITE TOOTH BULIMUS. Shell somewhat elongately turreted, scarcely umbilicated, whorls nine in number, obliquely very closely impressly striated, aperture small, somewhat square, margins joined, lip conspicuously furnished in the middle with a strong internal tooth, forming a depression on the outer surface; olive-horny, tooth and lip whitish.

PFEIFFER, Phil. Abbild. Conch. vol. ii. p. 114. *Bulimus*, pl. 4. f. 7.

Hab. Near Trebizond.

Easily distinguished by a prominent internal tooth on the outer lip, whilst there is no indication of one on the columella.

Species 433. (Mus. Cuming.)

BULIMUS SIDONIENSIS. *Bul. testā cylindraceo-turritā, umbilicatā, anfractibus novem, plano-convexis, obliquē*

striatis, aperturā subquadratā, prominulā, labro reflexo; pallidē cæruleo-cinerascente, apice corneā, aperturæ fauce fulvā.

THE SIDON BULIMUS. Shell cylindrically turreted, umbilicated, whorls nine in number, flatly convex, obliquely striated, aperture somewhat square, prominent, lip reflected; pale bluish ash, apex horny, interior of the aperture fulvous.

Helix Sidoniensis, Férussac, Prodrome.

Pupa Bulimoides, Pfeiffer.

Hab. Syria.

On the confines of the genera *Bulimus* and *Pupa*, but partaking rather more of the characters of the former.

Species 434. (Mus. Cuming.)

BULIMUS MARTINICENSIS. *Bul. testā acuminato-turritā, umbilicatā, spiræ suturis subimpressis, anfractibus septem ad octo, subtiliter obliquē striatis, aperturā subquadrato-ovatā, labro expanso; corneā, subpellucidā, labro albo.*

THE MARTINIQUE BULIMUS. Shell acuminate turreted, umbilicated, sutures of the spire impressed, whorls seven to eight in number, finely obliquely striated, aperture somewhat squarely ovate, lip expanded; horny, rather transparent, lip white.

PFEIFFER, Pro. Zool. Soc., 1846, p. 40.

Hab. Martinique.

Chiefly distinguished by its acuminate form.

Species 435. (Mus. Cuming.)

BULIMUS PERSPECTIVUS. *Bul. oblongo-turritā, tenuiculā, ampliter et profundē umbilicatā, anfractibus septem, lævibus, subtilissimē obliquē striatis, aperturā subquadrato-oblongā; labro parum expanso; intus extusque intensē castaneā.*

THE PERSPECTIVE BULIMUS. Shell oblong-turreted, rather thin, largely and deeply umbilicated, whorls seven in number, smooth, very finely obliquely striated, aperture somewhat squarely oblong, lip but little expanded; deep chesnut brown within and without.

PFEIFFER, Pro. Zool. Soc., 1846, p. 33.

Hab. — ?

Of a uniform transparent deep reddish-chesnut colour.

March, 1849.

Species 436. (Mus. Cuming.)

BULIMUS KRAUSSI. *Bul. testā ovato-ventricosā, anfractibus septem, undique pulcherrimè minutè granulatis, longitudinaliter plicato-striatis, columellā strictè reflexā, labro subincrassato, non reflexo; albidā, rufo-fusco apicem versus conspicuè flammata, et supra suturas peculiariter articulata, columellā labrique limbo interno intensè castaneo-purpureis.*

KRAUSS'S BULIMUS. Shell ovately ventricose, whorls seven in number, very beautifully minutely granulated throughout, longitudinally plicately striated, columella closely reflected, lip rather thickened, not reflected; whitish, conspicuously flamed with reddish brown towards the apex, and peculiarly articulated above the sutures with the same colour, columella and inner edge of the lip deep chesnut-purple.

PFEIFFER, Symbolæ, vol. iii. p. 85. **Krauss,** Die Sudafrikanischen Mollusken, p. 78. pl. 5. f. 4.

Hab. Natal, South Africa (in the woods); **Krauss.**

This magnificent species, from a locality which has contributed little of particular interest to this genus, partakes very much of the form of *B. oblongus* and its congeners from South Eastern America. In colouring it is characterized by a singular articulated band around the sutures, and the lip and columella are coated with an enamel of deep chesnut-purple. In sculpture the entire surface of the shell is beautifully minutely granulated, besides being plicately striated, a character to which it is proper to direct attention from the difficulty of representing it in a figure.

The discovery of this fine species by Dr. Krauss in the woods of South Africa, gives us some idea of the richly painted snails and other animal forms that may be dwelling at this moment in the vast unexplored regions of that immense continent so fatal to European health and enterprise.

Species 437. (Mus. Cuming.)

BULIMUS PUBESCENS. *Bul. testā oblongo-ovatā, umbilicatā, anfractibus sex ad septem, subrotundatis, sub lente minutissimè reticulatis, columellā uniplicatā, reflexā,*

labro reflexo; pellucido-corneā, epidermide tenui pubescente indutā, columellā labroque albidis.

THE PUBESCENT BULIMUS. Shell oblong-ovate, umbilicated, whorls six to seven in number, somewhat rounded, very minutely reticulated beneath the lens, columella one-plaited, reflected, lip reflected; transparent horny, covered with a thin pubescent epidermis, lip and columella whitish.

MORICAND, Mém. 3rd Supp. p. 63. pl. 5. f. 21-23.

Hab. Bahia, Brazil.

Distinguished by its minutely reticulated surface, and pubescent epidermis.

Species 438. (Mus. Cuming.)

BULIMUS FRATERCULUS. *Bul. testā subacuminato-ovatā, umbilicatā, tenuiculā, anfractibus sex, obliquè tenuissimè plicato-striatis, striis impressis spiralibus parallelis remotis decussatis, columellā reflexā, labro simplici; pellucido-corneā.*

THE ALLIED BULIMUS. Shell somewhat acuminately ovate, umbilicated, rather thin, whorls six in number, obliquely very finely plicately striated, decussated with remote parallel spiral impressed striæ, columella reflected, lip simple; transparent horny.

POTIEZ and MICHAUD, Gal. de Douai, p. 141. pl. 13. f. 7, 8. *Cochlogena fraterculus*, Férussac.

Hab. Guadaloupe.

The remote spiral striæ which characterize this shell, are totally different in appearance from those which traverse it obliquely.

Species 439. (Mus. Cuming.)

BULIMUS ORBIGNII. *Bul. testā acuminato-oblongā, umbilicatā, anfractibus septem, concentricè creberrimè tenuiliratis, columellā subreflexā, labro simplici; albā.*

ORBIGNY'S BULIMUS. Shell acuminately oblong, whorls seven in number, concentrically very closely finely ridged, columella slightly reflected, lip simple; white.

PFEIFFER, Pro. Zool. Soc., 1846, p. 31.

Hab. Lima.

Very like the *B. scalariformis* in general aspect, but sufficiently distinct on comparison.



440.



441.



442.



443.



444.



445.



446.



447.



448.



449.

BULIMUS.

PLATE LXIV.

Species 440. (Mus. Cuming.)

BULIMUS SOCOTRENSIS. *Bul. testā globosā, crassiusculā, umbilicatā, anfractibus quinque ad sex, conspicuè concentricè plicato-striatis, aperturā subrotundatā; albidā, fusco peculiariter obliquè spiraliter undato-strigatā, aperturæ fauce fuscā.*

THE SOCOTRA BULIMUS. Shell globose, rather thick, umbilicated, whorls five to six in number, conspicuously concentrically plicately striated, aperture somewhat rounded; whitish, peculiarly obliquely spirally streaked in a waved manner with brown, interior of the aperture brown.

Hab. Island of Socotra.

About the size of a large pea, curiously painted with spirally oblique streaks.

Species 441. (Mus. Cuming.)

BULIMUS FERUSSACI. *Bul. testā oblongo-turritā, umbilicatā, anfractibus octo, subrotundatis, lævibus, columellā reflexā, aperturā parvā; opaco-albā, nigripunctatā, anfractu ultimo fasciā nigrā cingulato.*

FERUSSAC'S BULIMUS. Shell oblong-turreted, umbilicated, whorls eight in number, somewhat rounded, smooth, columella reflected, aperture small; opaque-white, dotted with black, last whorl encircled with a black band.

DUNKER, Zeitschr. für Malac. 1845, p. 164.

Hab. Loanda, West Africa.

Sprinkled with minute dots upon an opaque-white ground, the last whorl being encircled with a conspicuous band.

Species 442. (Mus. Cuming.)

BULIMUS BAHIENSIS. *Bul. testā fusiformi-oblongā, umbilicatā, anfractibus octo, plano-convexis, lævibus, columellā reflexā, uniplicatā, aperturā oblongā, labro expansā; pellucido-albā, opaco-albo hic illic peculiariter undatā.*

THE BAHIA BULIMUS. Shell fusiformly oblong, umbilicated, whorls eight in number, flatly convex, smooth, columella reflected, one-plaited, aperture oblong, lip expanded; transparent-white, peculiarly waved here and there with opaque-white.

MORICAND, Mém. de Genève, vol. vi. p. 541. pl. 1. f. 6.

Hab. Bahia, Brazil.

The opaque-white streaks on the surface of this transparent shell, have somewhat the character of an epidermis.

Species 443. (Mus. Cuming.)

BULIMUS RETICULATUS. *Bul. testā obeso-cylindraceā, solidiusculā, apice mucronato, anfractibus septem ad octo, plano-convexis, sub lente minutè granoso-reticulatis, suturis peculiariter sulcatis, columellā latè reflexā, aperturā parviusculā, labro conspicuè reflexo; albido-fuscescente, labro eburneo.*

THE RETICULATED BULIMUS. Shell stoutly cylindrical, rather solid, apex pointed, whorls seven to eight in number, flatly convex, minutely granosely reticulated beneath the lens, sutures peculiarly grooved, columella broadly reflected, aperture rather small, lip conspicuously reflected; whitish-brown, lip ivory-white.

Hab. West Africa.

Distinguished by its delicate minutely grained surface.

Species 444. (Mus. Cuming.)

BULIMUS CYLINDRICUS. *Bul. testā pyramidal-turritā, minutè umbilicatā, anfractibus decem ad undecim, lævibus, politis, columellā plano-reflexā; albidā, fuscescente fasciatā, strigis purpureo-nigris peculiariter reticulatis longitudinaliter obliquè pictā, apice nigricante.*

THE CYLINDRICAL BULIMUS. Shell pyramidally turreted, minutely umbilicated, whorls ten to eleven in number, smooth, polished, columella flatly reflected; whitish, banded with light brown, longitudinally obliquely painted with peculiarly reticulated purple-black streaks, apex blackish.

GRAY, Annals of Philosophy, 1825, vol. ix. p. 414.

Bulimus articulatus, Turton.

Macroceramus signatus, Guilding.

Bulimus signatus, Sowerby.

Hab. Island of Tortola, West Indies.

A singularly-painted porcelain-like shell, distinguished by its pyramidal growth.

Species 445. (Mus. Cuming.)

BULIMUS GUILDINGII. *Bul. testā pyramidal-turritā,*

March, 1849.

minutè umbilicatâ, anfractibus decem ad undecim, sub-rotundatis, lævibus, columellâ parum reflexâ, aperturâ parvâ, rotundatâ, labro subexpanso; albâ, maculis nigricante-fuscis reticulatis obliquè pictâ, anfractu ultimo fasciato, apice nigricante.

GUILDING'S BULIMUS. Shell pyramidally turreted, minutely umbilicated, whorls ten to eleven in number, rather rounded, smooth, columella but little reflected, aperture small, rounded, lip slightly expanded; white, obliquely painted with blackish-brown reticulated patches, last whorl banded, apex blackish.

PFEIFFER, Symbolæ, vol. i. p. 82, and vol. ii. p. 115.

Hab. West Indies.

Distinguished from the preceding species, by the whorls being more rounded, and the shell less sharply pyramidal.

Species 446. (Mus. Cuming.)

BULIMUS FRAGOSUS. *Bul. testâ obeso-cylindræâ, latè umbilicatâ, apice mucronato, anfractibus septem, plano-convexis, concentricè creberrimè elevato-striatis, suturis quasi sulcatis, columellâ latè reflexâ, obscurè uniplicatâ, aperturâ subrotundâ, labro expanso; sordidè albâ.*

THE ROUGH BULIMUS. Shell stoutly cylindrical, broadly umbilicated, apex painted, whorls seven in number, flatly convex, concentrically very closely elevately striated, sutures as though grooved, columella broadly reflected, obscurely one-plaited, aperture nearly round, lip expanded; dead white.

PFEIFFER, Symbolæ, vol. ii. p. 45.

Cochlogena fragosa, Férussac.

Hab. Yemen, Arabia.

The margins of the aperture almost unite on the body whorl.

Species 447. (Mus. Cuming.)

BULIMUS CORONATUS. *Bul. testâ oblongo-turritâ, vix umbilicatâ, anfractibus lævibus vel obscurè rudè striatis, tuberculis parvis compressis ad suturas crenulatis, columellâ tenui, angustâ; pellucido-stramineâ.*

THE CORONATED BULIMUS. Shell oblong-turreted, scarcely umbilicated, whorls smooth, or obscurely

rudely striated, crenulated at the sutures with a row of small compressed tubercles, columella thin, narrow; transparent straw-colour.

PFEIFFER, Symbolæ, vol. iii. p. 83.

Hab. Brazil.

Each whorl is coronated at the sutures by a row of small compressed tubercles.

Species 448. (Mus. Cuming.)

BULIMUS FORMOSUS. *Bul. testâ cylindræo-oblongâ, sub-umbilicatâ, apice mucronato, anfractibus decem, rotundatis, concentricè subtiliter striatis, aperturâ parvâ, rotundâ, labro subexpanso; albidâ, nigricante-fusco transversim lineatâ et obliquè remotè strigatâ, apice nigricante.*

THE BEAUTIFUL BULIMUS. Shell cylindrically oblong, slightly umbilicated, apex pointed, whorls ten in number, rounded, concentrically finely striated, aperture small, rounded, lip a little expanded; whitish, transversely lineated and obliquely remotely streaked with blackish brown, apex blackish.

GRAY, Wood, Index Test. Supp. pl. 6. f. 24.

Hab. Island of St. Domingo, West Indies.

Closely allied to the pretty West Indian species above described, *B. cylindricus* and *Guildingii*.

Species 449. (Mus. Cuming.)

BULIMUS BOISSIERI. *Bul. testâ globosâ, inflatâ, fragili, pellucidâ, epidermide tenui corneâ nitente indutâ, spirâ brevi, suturis impressis, anfractibus quatuor ad quinque, rotundatis, columellâ tenui, simplici, aperturâ sub-amplâ; pellucido-brunneâ.*

BOISSIER'S BULIMUS. Shell globose, inflated, fragile, transparent, covered with a thin shining horny epidermis, spire short, sutures impressed, whorls four to five in number, rounded, columella thin, simple, aperture rather large; transparent brown.

Hab. Bahia, Brazil.

A curious little *Physa*-like shell, of transparent horny substance, extremely delicate to the touch.



451.



450.



452.



453.



454.



455.



456.



457.



458.



459.

G.B.S. del et lith.

R.B. & R. imp.

[Increased one fourth.]

BULIMUS.

PLATE LXV.

Species 450. (Mus. Cuming.)

BULIMUS COSTATUS. *Bul. testā cylindraceo-turritā, solidiusculā, compressè umbilicatā, anfractibus octo, convexis, nitidè striato-costulatis, columellā plano-reflexā, plicato-dentatā, aperturā parvā, labro paululum expanso; cinerascēte-carneā, nitente, costulis albicantibus, aperturæ fauce fuscā.*

THE RIBBED BULIMUS. Shell cylindrically turreted, rather solid, compressly umbilicated, whorls eight in number, convex, neatly sculptured with fine striate ribs, columella flatly reflected, plicately toothed, aperture small, lip a little expanded; pale ashy flesh-colour, shining, ribs whitish, interior of the aperture brown.

PFEIFFER, Pro. Zool. Soc., 1848.

Hab. Brazil.

Very delicately ribbed after the manner of a *Pupa*.

Species 451. (Mus. Cuming.)

BULIMUS CONIFORMIS. *Bul. testā ovato-conicā, minutè umbilicatā, anfractibus quinque, lævibus, ultimo ventricosō, medio obtusè angulato, columellā brevissimè reflexā, aperturā oblongā, labro simplici, acuto; albidā, strigis fuscis obliquè irregulariter notatā.*

THE CONE-SHAPED BULIMUS. Shell ovately conical, minutely umbilicated, whorls five in number, smooth, last whorl ventricose, obtusely angled in the middle, columella very shortly reflected, aperture oblong, lip simple, sharp; whitish, obliquely irregularly marked with brown streaks.

PFEIFFER, Pro. Zool. Soc., 1846. p. 114.

Hab. Andes of Columbia, near Merida.

The peculiar conical form of this shell gives it the appearance of immature growth.

Species 452. (Mus. Benson.)

BULIMUS PUNCTATUS. *Bul. testā ovato-conicā, subprofundè umbilicatā, anfractibus sex, lævibus, columellā latè reflexā, appressā, aperturā ovatā, labro simplici; ustulato-albā, zonulā angustā punctisque numerosis sparsis, nigricantibus, ornatā, apice nigricante.*

THE DOTTED BULIMUS. Shell ovately conical, rather deeply umbilicated, whorls six in number, smooth,

columella broadly reflected, appressed, aperture ovate, lip simple; scorched white, ornamented with a narrow blackish spiral zone, and numerous scattered spots, apex blackish.

ANTON, Verz. p. 62.

Hab. Bundelkhund and Southern India (on plants); Benson, Jerdon.

The name given to this species in manuscript by Mr. Benson was *solatus*, signifying *freckled*, not *solutus* as printed by Dr. Pfeiffer. Manuscript names ought not, however, to be quoted as synonymes; a private name is scarcely open to public criticism.

Species 453. (Mus. Cuming.)

BULIMUS PEMPHIGODES. *Bul. testā globoso-conicā, ventricosō-inflatā, tenuissimā, minutè umbilicatā, spirā brevi, anfractibus quinque, convexis, obliquè subtilissimè striatis, columellā reflexā, appressā, aperturā amplā, labro simplici, acuto; pallidè virescente-stramineā, diaphanā, epidermide tenui opacā fasciatim indutā.*

THE BLADDER-LIKE BULIMUS. Shell globosely conical, ventricosely inflated, very thin, minutely umbilicated, spire short, whorls five in number, convex, obliquely very finely striated, columella reflected, appressed, aperture large, lip simple, sharp; pale greenish straw-colour, diaphanous, covered with a thin opaque epidermis.

JONAS, Zeitschr. fur Malac. 1846. p. 12.

Hab. Guinea.

An extremely delicate inflated species named originally *B. vesiculosus* by Dr. Jonas in manuscript.

Species 454. (Mus. Cuming.)

BULIMUS IRREGULARIS. *Bul. testā ovato-oblongā, subampliter umbilicatā, anfractibus sex, ruguloso-striatis, suturis impressis, columellā latè reflexā, aperturā oblongā, labro simplici; carneo-fuscescente.*

THE IRREGULAR BULIMUS. Shell ovately oblong, rather largely umbilicated, whorls six in number, rather roughly striated, sutures impressed, columella broadly reflected, aperture oblong, lip simple; light fleshy brown.

PFEIFFER, Pro. Zool. Soc., 1847. p. 231.

May, 1849.

Hab. Quito, Equador; Lattre.

This species is more fully described by Dr. Pfeiffer, but its characters are very simple, approaching those of the Chilean group.

Species 455. (Mus. Cuming.)

BULIMUS DEALBATUS. *Bul. testā ovato-conicā, tenuiculā, umbilicatā, anfractibus sex, apicem versus subtilissimè striatis, columellā reflexā, aperturā ovatā, simplici; virescente-albā, subpellucidā, maculis punctisque opaco-albis irregulariter strigatā et aspersā.*

THE WHITED BULIMUS. Shell ovately conical, rather thin, umbilicated, whorls six in number, very finely striated towards the apex, columella reflected, aperture ovate, simple; pale greenish transparent white, irregularly streaked and sprinkled with opaque dots and blotches.

SAY, Journ. Nat. Hist. Soc. Philadelphia, vol. ii. p. 159.

Hab. Alabama, North America.

The surface marking of this shell is not unlike that of the *B. conspersus*.

Species 456. (Mus. Cuming.)

BULIMUS YUNGASENSIS. *Bul. testā subfusiformi-oblongā, tenuiculā, vix umbilicatā, anfractibus sex, subrugosis, obscurè indentatis, columellā recedente, reflexā, plano-appressā; violascente-albā, maculis violaceo-brunneis inæqualibus triseriatim cinctā.*

THE YUNGAS BULIMUS. Shell somewhat fusiformly oblong, rather thin, scarcely umbilicated, whorls six in number, rather rough, obscurely indented, columella receding, reflected, flatly appressed; violet-tinged white, encircled with three rows of irregular violet-brown spots.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 316. pl. 40. f. 1.

Hab. Eastern side of the Andes of Bolivia, in the woods near the Meguilla river; D'Orbigny.

This species is unknown to me in good condition.

Species 457. (Mus. Cuming.)

BULIMUS DUSSUMIERI. *Bul. testā obeso-cylindraceutā, um-*

bilicatā ad apicem subobtusā, anfractibus octo, angustis, obliquè striatis, columellā reflexā, aperturā subquadrata; pellucido-corneā.

DUSSUMIER'S BULIMUS. Shell stoutly cylindrical, umbilicated, rather obtuse at the apex, whorls eight in number, narrow, obliquely striated, columella reflected, aperture somewhat square; transparent horny.

Hab. India.

Mr. Cuming received this shell from the continent with the above name, but I cannot learn that it has been published.

Species 458. (Mus. Cuming.)

BULIMUS SAYI. *Bul. testā conico-oblongā, minutè umbilicatā, anfractibus sex, confertim rugoso-plicatis, columellā breviter reflexā, appressā; opaco-albā, strigis rufescente-fuscis pellucidis longitudinaliter notatā, circa umbilicum rufescente-fuscā.*

SAY'S BULIMUS. Shell conically oblong, minutely umbilicated, whorls six in number, closely rugosely plicated, columella shortly reflected, appressed; opaque white, longitudinally marked with transparent reddish-white streaks, reddish-brown around the umbilicus.

PFEIFFER, Pro. Zool. Soc., 1846, p. 114.

Hab. —?

The transparency of the brown stripes that distinguish this species, is very peculiar.

Species 459. (Mus. Cuming.)

BULIMUS CYCLOSTOMA. *Bul. testā conicā, profundè et subampliter umbilicatā, anfractibus rotundatis, concentricè striatis, columellā latè reflexā, aperturā circulari, labro simplici; cærulescente-albā.*

THE ROUND-MOUTH BULIMUS. Shell conical, deeply and rather largely umbilicated, whorls rounded, concentrically striated, columella broadly reflected, aperture circular, lip simple; bluish-white.

Hab. —?

Of a delicate white texture, deeply umbilicated, and approaching the form of a *Cyclostoma*.



460.



461.



462.



463



464.



465.



466.



467.



468.



469.

G.B.S. del. et lith.

R.B. & R. imp.

[Increased one half]

BULIMUS.

PLATE LXVI.

Species 460. (Mus. Cuming.)

BULIMUS UMBILICARIS. *Bul. testā pyramidalī-conicā, profundissimè et amplissimè umbilicatā, anfractibus sex ad septem, compressissimis, concentricè striatis, suturis impressis, aperturā angustè ovali, labro subexpanso; pallidè corneo-cinereā.*

THE UMBILICAL BULIMUS. Shell pyramidally conical, very deeply and largely umbilicated, whorls six to seven in number, very compressed, concentrically striated, sutures impressed, aperture narrow-oval, lip slightly expanded; pale flesh-tinged ash.

SOULEYET, *Revue Cuvierienne*, 1842, p. 102.

Hab. Cobija, Bolivia.

This species is remarkable for its very capacious umbilicus, the whorls being so much compressed as to form a hollow cone.

Species 461. (Mus. Cuming.)

BULIMUS VARIATUS. *Bul. testā cylindraceo-oblongā, crassiusculā, compressè umbilicatā, anfractibus septem, obliquè striatis, aperturā parvā, columellā labroque reflexis; brunneā, strigis lutescentibus obliquè variegatā.*

THE VARIED BULIMUS. Shell cylindrically oblong, rather thick, compressly umbilicated, whorls seven in number, obliquely striated, aperture small, lip and columella reflected; dark brown, obliquely variegated with yellowish streaks.

WEBB and BERTHELOT, *Syn.* p. 326.

Hab. Canary Islands.

There appears to be a slight yellowish epidermis.

Species 462. (Mus. Cuming.)

BULIMUS GOSSEI. *Bul. testā cylindraceo-turritā, compressè umbilicatā, apice attenuato, anfractibus undecim, angustis, subrotundatis, perobliquè costulato-striatis, suturis crenulatis, aperturā circulari, columellā labroque paululum expansis; griseo-cinerascente, strigis semilunaribus albis, fusco-umbratis, punctisque fuscis, ornatā, fusco pellucido.*

GOSSE'S BULIMUS. Shell cylindrically turreted, compressly umbilicated, apex attenuated, whorls eleven in number, narrow, somewhat rounded, very obliquely sculptured with fine rib-like striæ, sutures

crenulated, aperture circular, lip and columella a little expanded; greyish-ash, ornamented with brown dots and white semilunar streaks shaded with brown, the brown being transparent.

PFEIFFER, *Pro. Zool. Soc.*, 1845, p. 137.

Hab. Jamaica; Gosse.

The interesting new species of *Bulimus* and *Achatina* collected by Mr. Gosse in the Island of Jamaica, whilst engaged in ornithological pursuits, present an honourable testimony of his zeal in natural science, and furnish an example of what may be done by an active collector, with eyes to observe, and a mind to comprehend, the minute forms of animal life.

Species 463. (Mus. Cuming.)

BULIMUS KIENERI. *Bul. testā cylindraceo-turritā, compressè umbilicatā, apice attenuato, anfractibus tredecim, subrotundatis, perobliquè costulato-striatis, suturis crenulatis, aperturā circulari, columellā labroque subexpansis; fusco-corneā, strigis semilunaribus albis, saturatè umbratis, ornatā.*

KIENER'S BULIMUS. Shell cylindrically turreted, compressly umbilicated, apex attenuated, whorls thirteen in number, somewhat rounded, very obliquely striated in a rib-like manner, sutures crenulated, aperture circular, lip and columella a little expanded; brownish-horny, ornamented with semilunar white spots shaded with darker brown.

PFEIFFER, *Pro. Zool. Soc.*, 1846, p. 40.

Hab. Honduras.

It is somewhat doubtful whether this is anything more than a local variety of the *B. Gossei* of Jamaica.

Species 464. (Mus. Cuming.)

BULIMUS ZEBRIOLUS. *Bul. testā cylindraceo-elongatā, Pupæ-formi, latè umbilicatā, anfractibus decem, obliquè subobscurè striatis, aperturā subquadratā, tridentatā, marginibus subexpansis, callo conjunctis; cretaceo-albā, strigis angustis fuscis obliquè notatā.*

THE STRIPED BULIMUS. Shell cylindrically elongated, Pupa-shaped, broadly umbilicated, whorls ten in number, obliquely rather obscurely striated, aperture somewhat square, three-toothed, margins a little ex-

panded, joined by a callosity; chalk-white, obliquely marked with narrow brown streaks.

Helix (Cochlogena) zebra, Férussac, Prodrome, No. 455.

Bulimus zebra, Olivier.

Var. immaculata. *Bulimus calcareus*, Parreyss.

Hab. Greece; Capt. Spratt.

Of an opake chalk-white obliquely marked with numerous streaks of light brown.

Species 465. (Mus. Cuming.)

BULIMUS BIDENS. *Bul. testā cylindraneo-elongatā, crassiusculā, compressè umbilicatā, anfractibus novem, plano-convexis, obliquè obscurè striatis, columellā reflexā, conspicuè dentato-plicatā, aperturā parvā; cærulescente-albā, strigis angustis perpaucis fuscis notatā.*

THE DOUBLE-TOOTH BULIMUS. Shell cylindrically elongated, rather thick, compressly umbilicated, whorls nine in number, flatly convex, obliquely obscurely striated, columella reflected, conspicuously dentately plaited, aperture small; bluish-white, marked with a very few brown streaks.

KRYNICKI, Bull. Acad. Moscow, vol. vi. p. 401. pl. 1. f. 3.

Bulimus Clausiliæformis, Menke.

Bulimus appendiculatus, Potiez and Michaud.

Hab. Syria.

Potiez and Michaud regarded this species as the *Helix (Cochlogena) appendiculatus* of De Férussac, of which Dr. Pfeiffer is doubtful.

Species 466. (Mus. Cuming.)

BULIMUS CRETENSIS. *Bul. testā cylindraneo-oblongā, apicem versus subattenuatā, vix umbilicatā, anfractibus septem, ruguloso-striatis, columellā subplanatā, aperturā quadrato-ovatā, labro subexpanso, marginibus callo tenuiculo conjunctis; rosaceo-luteā, suturis albimarginatis, labro albo.*

THE CRETEAN BULIMUS. Shell cylindrically oblong, rather attenuated towards the apex, scarcely umbilicated, whorls seven in number, delicately roughly striated, columella somewhat flattened, aperture squarely ovate, lip rather expanded, margins joined by a thin callosity; pale pinkish-yellow, sutures edged with white, lip white.

PFEIFFER, Philippi, Abbild. und besch. *Bulimus*, pl. 5. f. 8.

Hab. Island of Candia; Capt. Spratt.

A very delicate semitransparent shell, though of rather solid growth.

Species 467. (Mus. Cuming.)

BULIMUS ACUTUS. *Bul. testā pyramidalis-conicā, minutè umbilicatā, anfractibus novem, rotundatis, leviter corrugato-striatis, ad suturas rudè crenulatis, columellā tenui, reflexā, aperturā circulari, labro simplici, acuto;*

pallidè corneā, maculis strigisque opaco-lacteis marmoratā, anfractu ultimo zonulā nigrā cingulato.

THE ACUTE BULIMUS. Shell pyramidally conical, minutely umbilicated, whorls nine in number, rounded, slightly striated in a wrinkled manner, rudely crenulated at the sutures, columella thin, reflected, aperture circular, lip simple, acute; light horny, marbled with opake cream-coloured streaks and blotches, last whorl encircled by a narrow black zone.

BRUGUIERE, Enc. Méth. vol. i. p. 323.

Helix acuta, Muller,

Helix bifasciata, Pulteney.

Helix fasciata, Pennant.

Turbo turricula maroccana, Chemnitz.

Hab. Spain, Portugal, West of England and Ireland.

The *B. articulatus* of Lamarck is probably a variety.

Species 468. (Mus. Cuming.)

BULIMUS UNICARINATUS. *Bul. testā cylindraneo-turritā, minutè umbilicatā, apice attenuato, anfractibus decem, obliquè subtilissimè striatis, ultimo basi acutè unicarinato, aperturā parvā, circulari, labro subreflexo; olivaceo-corneā, strigis longitudinalibus numerosis opaco-albis ornatā.*

THE ONE-KEELED BULIMUS. Shell cylindrically turreted, minutely umbilicated, apex attenuated, whorls ten in number, obliquely very finely striated, last whorl encircled by a single sharp keel at the base, aperture small, circular, lip a little reflected; olive horny, ornamented with numerous opake white longitudinal streaks.

PFEIFFER, Monog. Helic. vol. ii. p. 80.

Pupa unicarinata, Lamarck.

Bulimus Canimarensis, Pfeiffer.

Hab. Cuba, Guadaloupe.

Belongs to the same peculiar type as *B. Gossei*.

Species 469. (Mus. Cuming.)

BULIMUS BADIOA. *Bul. testā ovato-conicā, compressè umbilicatā, anfractibus sex, subtilissimè granulatis, ultimo subventricosos, columellā reflexā, appressā, aperturā rotundato-ovalis, labro subexpanso, marginibus callo subtuberculoso conjunctis, castaneo-brunneā, labro albido.*

THE BROWN BULIMUS. Shell ovately conical, compressly umbilicated, whorls six in number, very finely granulated, last whorl rather ventricose, columella reflected, appressed, aperture rotundately oval, lip slightly expanded, margins joined by a somewhat tubercular callosity.

WEBB and BERTHELOT, Syn. p. 318.

Helix (Cochlogena) badiosa, Férussac.

Hab. Island of St. Thomas, Férussac; Teneriffe, Webb and Berthelot.

Chiefly characterized by its delicate granulated sculpture.



471.



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479.

G. B. S. del. et lith.

R. B. & R. imp.

[Increased one-half]

BULIMUS.

PLATE LXVII.

Species 470. (Mus. Cuming.)

BULIMUS ACHATINACEUS. *Bul. testā elongato-turritā, solidiusculā, anfractibus octo, creberrimè rudè striatis, columellā brevissimè reflexā, aperturā parvā, labro acuto; stramineā, cereā.*

THE ACHATINA-LIKE BULIMUS. Shell elongately turreted, rather solid, whorls eight in number, very closely rudely striated, columella very shortly reflected, aperture small, lip acute; straw-colour, waxen.

PFEIFFER, Symbolæ, vol. iii. p. 82.

Hab. Java.

Very closely allied to some of the small subulate species of *Achatina*.

Species 471. (Mus. Cuming.)

BULIMUS SUBTILIS. *Bul. testā cylindraceo-turritā, vix umbilicatā, anfractibus novem, obliquè subobscure rudè striatis, columellā parum reflexā, aperturā parvā; pellucido-corneā, suturis albi-marginatis.*

THE DELICATE BULIMUS. Shell cylindrically turreted, scarcely umbilicated, whorls nine in number, obliquely rather obscurely rudely striated, columella but little reflected, aperture small; transparent horny, sutures edged with white.

ROSSMASLER, vol. vi. p. 47. f. 392.

Bulimus noctivagus, Parreyss.

Hab. Dalmatia.

The white edge of the sutures is only faintly indicated, but it is a character not to be over-looked.

Species 472. (Mus. Cuming.)

BULIMUS SANDWICENSIS. *Bul. testā cylindraceo-turritā, umbilicatā, anfractibus decem, subplanulatis, columellā latiusculā, parum reflexā, aperturā parvā, labro acuto; rufo-brunneā, strigis undulatis opaco-albis notatā.*

THE SANDWICH BULIMUS. Shell cylindrically turreted, umbilicated, whorls ten in number, somewhat flattened, columella rather broad, but little reflected, aperture small, lip sharp; red-brown, marked with waved opaque-white streaks.

PFEIFFER, Pro. Zool. Soc., 1846, p. 31.

Hab. Sandwich Islands.

Of a bright dark red-brown colour, waved obliquely with delicate opaque-white streaks.

Species 473. (Mus. Cuming.)

BULIMUS MERDUENIANUS. *Bul. testā oblongo-conicā, umbilicatā, anfractibus octo, obscure striatis, columellā latiusculā, parum reflexā, aperturā rotundato-ovali, marginibus fere conjunctis, sordidè corneā.*

THE MERDUEN BULIMUS. Shell oblong conical, umbilicated, whorls eight in number, obscurely striated, columella rather broad, but little reflected, aperture rotundately oval, margins almost joined; dull horny.

KRYNICKI, Bull. Acad. Sci. Moscow, 1837, p. 53.

Bulimus tener, Ziegler.

Bulimus fragilis, Parreyss.

Hab. Merdwen; Asia Minor.

Distinguished by its conical form.

Species 474. (Mus. Cuming.)

BULIMUS COSENSIS. *Bul. testā cylindraceo-oblongā, compressè umbilicatā, anfractibus septem, obliquè subrudè striatis, columellā latā, concavo-appressā, aperturā subquadrato-ovatā, labro paululum expanso; cærulescente-albā, opacā.*

THE COS BULIMUS. Shell cylindrically oblong, compressly umbilicated, whorls seven in number, obliquely rather rudely striated, columella broad, concavely appressed, aperture rather squarely ovate, lip a little expanded; bluish-white, opaque.

Hab. Island of Cos, Grecian Archipelago; Capt. Spratt.

The lip is slightly expanded within, after the manner of *Partula*.

Species 475. (Mus. Cuming.)

BULIMUS MONTIVAGUS. *Bul. testā pyramidali, compressè umbilicatā, anfractibus novem, obscure tenuistriatis, columellā reflexā, aperturā parviusculā, labro subexpanso; pallidè virescente-albā, pellucidā, fuscescente hic illic obscure strigatā.*

THE MOUNTAIN BULIMUS. Shell pyramidal, compressly umbilicated, whorls nine in number, obscurely finely striated, columella reflected, aperture rather small, lip

somewhat expanded; pale greenish-white, transparent, obscurely streaked here and there with light brown.

D'ORBIGNY, Moll. Voy. dans l'Amér. Mérid. p. 275. pl. 34. f. 1 to 3.

Hab. Parana, Argentine Republic, (under dead leaves); D'Orbigny.

Has sometimes the appearance of being marked with white streaks.

Species 476. (Mus. Benson.)

BULIMUS PULLUS. *Bul. testā elongato-cylindraceutā, solidiusculā, vix umbilicatā, anfractibus novem, subtilissimè plicato-striatulis, infra suturas arcuatim crenulatis, aperturā parvā, circulari, columellā labroque paululum expansis; fuscescente-lacteā.*

THE BROWNISH BULIMUS. Shell elongately cylindrical, rather solid, scarcely umbilicated, whorls nine in number, very finely plicately striated, arcuately crenulated beneath the sutures, aperture small, circular, lip and columella a little expanded; brownish cream-colour.

GRAY, Pro. Zool. Soc., 1834, p. 66.

Pupa cylindrica, Hutton.

Hab. India. At Delhi (under stones); at Bundelkund (common among rocks and brushwood in the rainy season); Benson.

Mr. Benson collected a light variety of this species at Aden, Arabia, among loose stones on the skirts of the barren hills.

Species 477. (Mus. Cuming.)

BULIMUS LOEWII. *Bul. testā cylindraceuto-turritā, sinistrā, compressè umbilicatā, apice obtusè attenuato, anfractibus novem, angustis, planulatis, lævibus, aperturā subquadrato-ovali, quadridentatā; pellucido-corneā, dentibus labroque opaco-albis, suturis albidis.*

LOEWE'S BULIMUS. Shell cylindrically turreted, sinistral, compressly umbilicated, apex obtusely attenuated, whorls nine in number, narrow, rather flattened,

smooth, aperture somewhat squarely oval, four-toothed; transparent horny, teeth and lip opaque-white, sutures whitish.

PHILIPPI, Zeitschr. für Malac. 1844. p. 106.

Pupa Loewii, Kuster.

Hab. Lycia; Capt. Spratt.

This partakes much of the character of *Pupa*.

Species 478. (Mus. Benson.)

BULIMUS ARCUATUS. *Bul. testā oblongā, sinistrā, subventricosā, compressè umbilicatā, anfractibus septem, ruguloso-striatis, columellā latè appressā, labro subexpanso; saturatè corneo-fuscā, strigis lutescentibus angustis nitidè pictā, labro albido.*

THE ARCHED BULIMUS. Shell oblong, sinistral, somewhat ventricose, compressly umbilicated, whorls seven in number, finely roughly striated, columella broadly appressed, lip a little expanded; dark horny brown, neatly painted with narrow yellowish streaks, lip whitish.

PFEIFFER, Monog. Helic. viv. vol. ii. p. 118.

Bulimus ornatus, Hutton, MSS.

Hab. Mahassoo, Western Himalaya; Hutton.

I learn on the authority of Mr. Benson, that *ornatus* was the name originally given to this species by Capt. Hutton in manuscript, not *arcuatus* for which Dr. Pfeiffer mistook it. The error proves, however, to be a fortunate one, Hutton's name being already appropriated by Dufo.

Species 479. (Mus. Cuming.)

BULIMUS OLIVACEUS. *Bul. testā oblongā, compressè umbilicatā, anfractibus sex, obliquè striatulis, columellā appressā, labro paululum reflexo; corneo-olivaceā, sericinā, labro albo.*

THE OLIVE BULIMUS. Shell oblong, compressly umbilicated, whorls six in number, obliquely finely striated, columella appressed, lip a little reflected; horny olive, silken, lip white.

PFEIFFER, Abbild. und Besch. *Bulimus*, Pl. 5. f. 6.

Hab. Island of Candia; Capt. Spratt.

Of very simple form, with little or no sculpture.

Bulimus, Pl. LXVIII.



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489.

BULIMUS.

PLATE LXVIII.

Species 480. (Mus. Cuming.)

BULIMUS ORYZA. *Bul. testā cylindraceo-turritā, minutè umbilicatā, anfractibus octo, rotundatis, longitudinaliter striatis, spiræ suturis profundis, columellā subreflexā, aperturā minimā, suborbiculari, labro simplici; virescente-albā, vitreā.*

THE RICE-GRAIN BULIMUS. Shell cylindrically turreted, minutely umbilicated, whorls eight in number, rounded, longitudinally striated, sutures of the spire deep, columella slightly reflected, aperture very small, nearly orbicular, lip simple; greenish white, glassy.

BRUGUIERE, Encyc. Méth. vers, vol. i. p. 333.

Hab. Brazil.

The shell here figured agrees with the description of this species given by Deshayes (Lamarck, Anim. sans vert., vol. viii. p. 263), but not with Dr. Pfeiffer's diagnose, which describes a shell of cancellated sculpture, composed of five whorls only.

Species 481. (Mus. Cuming.)

BULIMUS TUCKERI. *Bul. testā subulato-turritā, minutè umbilicatā, anfractibus novem, convexiusculis, longitudinaliter striatis, spiræ suturis impressis, columellā subobliquè recedente, tenuiter reflexā, aperturā minutā, labro simplici; pallidè corneā, pellucidā.*

TUCKER'S BULIMUS. Shell subulately turreted, minutely umbilicated, whorls nine in number, rather convex, longitudinally striated, sutures of the spire impressed, columella somewhat obliquely receding, finely reflected, aperture minute, lip simple; pale horn, transparent.

PFEIFFER, Pro. Zool. Soc., 1846, p. 30.

Hab. Hardy's Island, Pacific Ocean; Tucker.

Chiefly distinguished by its subulate form.

Species 482. (Mus. Cuming.)

BULIMUS BACTERIONIDES. *Bul. testā elongato-turritā, cylindraceā, ad apicem obtusā, anfractibus octo ad novem, subplano-convexis, lævibus, nitidis, suturis impressis, columellā rectā, interdum leviter truncatā, aperturā parvā; lutescente-corneā, pellucidā.*

THE STAFF-LIKE BULIMUS. Shell elongately turreted, cylindrical, obtuse at the apex, whorls eight to nine

in number, rather flatly convex, smooth, shining, sutures impressed, columella straight, sometimes slightly truncated, aperture small; yellowish-horn, transparent.

D'ORBIGNY, Voyage dans l'Amér. Mérid. Moll., p. 260. pl. 29. f. 1 to 3.

Hab. Bolivia; D'Orbigny.

As an example of the little importance of the truncature of the columella as a generic character in the small *Achatinæ*, it may be remarked that in this species the columella is sometimes truncated and sometimes not.

Species 483. (Mus. Cuming.)

BULIMUS IMPRESSUS. *Bul. testā subulatā, anfractibus octo, plano-convexis, politis, nitidis, lineis impressis obscuris distantibus longitudinaliter notatis, columellā tenuiter reflexā, subobliquè recedente, aperturā parvā, oblongā; pellucido-corneā, solidiusculā.*

THE IMPRESSED BULIMUS. Shell subulate, whorls eight in number, flatly convex, polished, shining, longitudinally marked with distant obscure impressed lines, columella thinly reflected, obliquely receding, aperture small, oblong; transparent horny, rather solid.

Hab. — ?

A rather stout polished horny shell, marked here and there with faintly impressed lines, distinct from *B. subula*, in which the whorls are more rounded.

Species 484. (Mus. Cuming.)

BULIMUS MIMOSARUM. *Bul. testā cylindraceo-turritā, minutè umbilicatā, apice acutā, anfractibus decem, angustis, subrotundatis, lævigatis vel subtilissimè obliquè striatis, columellā tenui, latè reflexā, appressā, aperturā parvā, labro simplici; sordidè albā.*

THE MIMOSA-INHABITING BULIMUS. Shell cylindrically turreted, minutely umbilicated, apex sharp, whorls ten in number, narrow, somewhat rounded, smooth, or finely striated, columella thin, broadly reflected, appressed, aperture small, lip simple; dull white.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll., p. 262. pl. 41. f. 12-14.

Hab. Bolivia; D'Orbigny.

Found principally at the roots of thorny *Mimosa* trees.

Species 485. (Mus. Cuming.)

BULIMUS SPOLIATUS. *Bul. testā cylindraceo-elongatā, minutè umbilicatā, anfractibus octo, planulatis, punctis obscure indentatis, columellā subexpansā, lirā dentiformi aperturam intrante supernè munitā, aperturā subobliquā, labro medio obsolete unidentato; fuscescente-lacteā, fusco supra suturas spiraliter punctatā.*

THE SPOILED BULIMUS. Shell cylindrically elongated, minutely umbilicated, whorls eight in number, flattened, obscurely indented with punctures, columella rather expanded, furnished above with a tooth-like ridge entering the aperture, aperture rather oblique, lip with an obsolete tooth about the middle; brownish cream-colour, spirally dotted above the sutures with brown.

PARREYSS, Pfeiffer, *Symbolæ*, vol. iii. p. 87.

Hab. Greece.

Dr. Pfeiffer quotes the *Pupa fusiformis* of Deshayes as a synonyme of this species, but it does not agree with the description.

Species 486. (Mus. Cuming.)

BULIMUS SUBULIFORMIS. *Bul. testā acuminato-elongatā, gracili, apice subpapillari, anfractibus ad quatuordecim, planulatis, obliquè subtilissimè striatis, politis, nitidis, anfractu ultimo ad basin angulato, columellā tenui, aperturā minimā; lutescente-corneā, pellucidā.*

THE AWL-SHAPED BULIMUS. Shell acuminate elongated, slender, apex somewhat papillary, whorls about fourteen in number, flattened, obliquely very finely striated, polished, shining, last whorl angulated at the base, columella thin, aperture very small; yellowish-horny, transparent.

Helix subuliformis, Moricand, *Mém. Genève*, vol. vii. pt. 2. p. 427. pl. 2. f. 3.

Hab. Bahia, Brazil.

A delicate, bright yellow, horny species, distinguished by its prolonged spire of flattened whorls.

Species 487. (Mus. Cuming.)

BULIMUS PELLUCIDUS. *Bul. testā turritā, minutè umbilicatā, tenuissimā, anfractibus septem, rotundatis, longitudinaliter crebrius striatis, columellā tenui, reflexā, aperturā parvā, labro simplici; virescente-corneā, pellucidā.*

THE TRANSPARENT BULIMUS. Shell turreted, minutely umbilicated, very thin, whorls seven in number, rounded, longitudinally closely striated, columella thin, reflected, aperture small, lip simple; greenish-horny, transparent.

PFEIFFER, *Pro. Zool. Soc.*, 1847.

Hab. Province of Merida, New Granada; Funck.

An exceedingly delicate shell, having the appearance of light green glass.

Species 488. (Mus. Cuming.)

BULIMUS DECEPTUS. *Bul. testā subfusiformi-conicā, anfractibus septem, lævibus, nitidis, e suturis obscure concentricè striatis, columellā tortuosā, recedente, ad marginem callosā, aperturā oblongā, labro simplici; virescente-vitrēā, pellucidā.*

THE MISTAKEN BULIMUS. Shell somewhat fusiformly conical, whorls seven in number, smooth, shining, obscurely concentrically striated from the sutures, columella tortuous, receding, callous at the edge, aperture oblong, lip simple; greenish-glassy, transparent.

Bulimus interstinctus, Pfeiffer (not of Gould) *Monog. Helic.* p. 169.

Hab. — ?

Dr. Pfeiffer's description of this species is inadvertently referred to at Pl. LV. Sp. 367, owing to his having taken it to be the *B. interstinctus* of Gould; arising probably from the displacement of a label in Mr. Cuming's cabinet. Dr. Pfeiffer does not appear to have seen Dr. Gould's description of that species, and I have been equally unsuccessful myself in finding it.

The shell described and figured at Pl. LV. Sp. 367, was received from Dr. Gould by Mr. Cuming with the name *B. interstinctus* attached to it, and he has also received specimens from Mr. Redfield of the United States similarly named.

Species 489. (Mus. Cuming.)

BULIMUS BERGERI. *Bul. testā cylindraceo-turritā, minutè umbilicatā, anfractibus novem, planiconvexis, obliquè striatis, columellā latiusculā, aperturā parvā, tridentatā; fuscescente-corneā, dentibus albidis.*

BERGER'S BULIMUS. Shell cylindrically turreted, minutely umbilicated, whorls nine in number, flatly convex, obliquely striated, columella rather broad, aperture small, three-toothed; brownish horn-colour, teeth white.

PFEIFFER, *Symbolæ*, vol. iii. p. 52.

Pupa Bergeri, Roth.

Pupa tridentata, Anton.

Pupa tricuspis, Rossmasler.

Bulimus tridentatus, Parreyss.

Hab. Greece, Egypt, &c.

I follow Dr. Pfeiffer in referring this species to *Bulimus*, but it seems really a matter of indifference whether it is included in this genus or in *Pupa*.



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499.

BULIMUS.

PLATE LXIX.

Species 490. (Mus. Cuming.)

BULIMUS HOLOSTOMA. *Bul. testā turritā, profundè umbilicatā, anfractibus septem, subquadratis, corrugato-plicatis, peculiariter laxè convolutis, suturis profundis, aperturā integrā, tubulari; carneo-cinereā.*

THE ENTIRE-MOUTH BULIMUS. Shell turreted, deeply umbilicated, whorls seven in number, somewhat square, plicated in a wrinkled manner, peculiarly loosely convoluted, sutures deep, aperture entire, tubular; fleshy ash-colour.

PFEIFFER, Pro. Zool. Soc., 1846. p. 28.

Hab. Cobija, Bolivia.

An extremely interesting species in which the shell, forming a loosely convoluted spiral tube, has no axial pillar.

Species 491. (Mus. Cuming.)

BULIMUS RUPESTRIS. *Bul. testā turritā, minutè umbilicatā, anfractibus quinque ad sex, rotundatis, obliquè costulato-striatis, aperturā ovali, ferè integrā; fusco-corneā.*

THE ROCKY BULIMUS. Shell turreted, minutely umbilicated, whorls five to six in number, rounded, obliquely sculptured with fine rib-like striæ, aperture oval, almost entire; brownish-horny.

PHILIPPI, Enum. Moll. Sicil. p. 141. pl. 8. f. 18.

Pupa rupestris, Rossmasler.

Hab. Sicily; Philippi. Algeria; Terver.

A delicate *Scalaria*-like species in which the aperture is almost entire.

Species 492. (Mus. Cuming.)

BULIMUS CENOPICTUS. *Bul. testā oblongā, compressè umbilicatā, anfractibus quinque, subrotundatis, lævibus, columellā vix reflexā, aperturā parvā; pellucido-corneā.*

THE DIRTY-PAINTED BULIMUS. Shell oblong, compressly umbilicated, whorls five in number, somewhat rounded, smooth, columella scarcely reflected, aperture small; transparent horny.

Pupa cœnopicta, Hutton, Journ. Asiatic Soc., vol. iii. p. 85.

Hab. India.

Dr. Pfeiffer remarks that this may be a variety of *B. folliculus*, but that is unlikely.

Species 493. (Mus. Cuming.)

BULIMUS SUBDIAPHANUS. *Bul. testā cylindraceo-turritā, vix umbilicatā, anfractibus septem, convexis, subtilissimè obliquè striatis, columellā subreflexā, appressā, aperturā minimā, latiusculā; eburneā, subdiaphanā, solidiusculā.*

THE SEMITRANSSPARENT BULIMUS. Shell cylindrically turreted, scarcely umbilicated, whorls seven in number, convex, very finely obliquely striated, columella slightly reflected, appressed, aperture very small, rather broad; ivory-white, semitransparent, rather solid.

PFEIFFER, Symbolæ, vol. ii. p. 122.

Pupa subdiaphana.

Bulimus Bamboucha, Webb and Berthelot.

Hab. Cape De Verd Islands.

A long *Pupa*-shaped semitransparent ivory-white shell.

Species 494. (Mus. Cuming.)

BULIMUS SUBULA. *Bul. testā subulato-turritā, spiræ suturis impressis, anfractibus octo, longitudinaliter striatis, columellā rectā, brevissimè reflexā, aperturā suboblongā, labro simplici; pellucido-corneā, tenuissimā.*

THE AWL BULIMUS. Shell subulately turreted, sutures of the spire impressed, whorls eight in number, longitudinally striated, columella straight, very shortly reflected, aperture rather oblong, lip simple; transparent horny, very thin.

PFEIFFER, Symbolæ, vol. i. p. 85.

Bulimus octonoides, D'Orbigny.

Bulimus procerus, Adams.

Hab. Cuba.

A perfectly transparent shell, of a more acuminate subulate growth than the *B. octona*, for which it might be mistaken.

Species 495. (Mus. Benson.)

BULIMUS GRACILIS. *Bul. testā gracili-subulatā, vix umbilicatā, suturis impressis, anfractibus decem ad undecim, creberrimè tenuissimè concentricè striatis, columellā tenui, breviter reflexā, aperturā supernè leviter contractā, labro simplici; sordidè fuscescente-corneā.*

THE SLENDER BULIMUS. Shell slenderly subulate,

scarcely umbilicated, sutures impressed, whorls ten to eleven in number, very closely and finely concentrically striated, columella thin, shortly reflected, aperture slightly contracted at the upper part, lip simple; dull brownish horn colour.

HUTTON, Journ. Asiatic Soc., 1834. vol. iii. p. 84.

An eadem, *Bulimus Indicus*, Pfeiffer.

Hab. Bundelkhund, and all the plain Provinces of the Bengal Presidency; Benson. Point de Galle, Ceylon; Benson.

Dr. Pfeiffer's *B. Indicus* appears to be merely an immature state of this species.

Species 496. (Mus. Benson.)

BULIMUS NIVICOLA. *Bul. testā cylindraceo-ovatā, obesā, ventricosā, sinistrā, compressè umbilicatā, anfractibus septem, convexis, obliquè striatis, ad suturas subobscure crenulatis, columellā latiusculā, appressā, aperturā parvā, labro leviter expanso; rufo-fuscā, strigis albis obliquis hic illic irregulariter interruptis notatā, epidermide tenui lutescente indutā.*

THE SNOW-INHABITING BULIMUS. Shell cylindrically ovate, stout, ventricose, sinistral, compressly umbilicated, whorls seven in number, convex, obliquely striated, somewhat obscurely crenulated at the sutures, columella rather broad, appressed, aperture small, lip slightly expanded; red-brown, marked here and there with irregularly interrupted oblique white streaks, covered with a thin yellowish epidermis.

BENSON, MSS.

Pupa sylvatica, Hutton (fide Benson.)

Hab. Liti Pass, Western Himalaya (among juniper bushes and patches of snow at nearly 14,000 feet above the level of the sea); Capt. Hutton.

Mr. Benson is of opinion that this species, distinguished by its stout cylindrical form and reversed growth, which has been upwards of twelve years in his collection, is the *Pupa sylvatica* of Hutton, described in M'Clelland's Journal for January, 1841, as being found among juniper bushes at Burrenda Pass, and of which the name is pre-occupied in the present genus to which this species strictly belongs. It is remarkable for its stout cylindrical form and reversed growth; it should, however, be remembered when referring to the plate, that the figure is very considerably magnified.

Species 497. (Mus. Cuming.)

BULIMUS TURRICULA. *Bul. testā cylindraceo-turritā, minutè umbilicatā, prope apicem peculiariter attenuatā, anfractibus novem, rotundatis, perobliquè creberrimè costulato-striatis, columellā latè appressā, aperturā ferè circulari; fuscescente, strigis arcuatis albis fusco-umbratis hic illic marmoratā.*

THE LITTLE TURRET BULIMUS. Shell cylindrically turreted, minutely umbilicated, peculiarly attenuated near the apex, whorls nine in number, rounded, very obliquely closely striated in a fine rib-like manner, columella broadly appressed, aperture nearly circular; light brown, marbled here and there with arched brown-shaded white streaks.

PFEIFFER, Wiegman, Archiv., 1839. vol. i. p. 351.

Hab. Cuba.

An interesting little species allied in form to the *B. Gossei*.

Fig. 498. (Mus. Cuming.)

This little triangular shell, of which the figure is very highly magnified, proves to be the extreme young of *B. caelebs* (*B. solitarius*, Hutton) Pl. XLVII. Sp. 301, from Western Himalaya.

For Sp. 498. see Pl. LXX.

Species 499. (Mus. Cuming.)

BULIMUS VENTROSUS. *Bul. testā subpyramidal-conicā, minutè et profundè umbilicatā, anfractibus septem, planulato-convexis, peculiariter obscure plicato-corrugatis, columellā reflexā, aperturā ferè circulari, labro simplici; albidā, basi nigricante unifasciatā.*

THE VENTRICOSE BULIMUS. Shell somewhat pyramidally conical, minutely and deeply umbilicated, whorls seven in number, rather flatly convex, peculiarly obscurely plicately wrinkled, columella reflected, aperture nearly circular, lip simple; whitish, encircled with a narrow black band at the base.

Helix ventrosa, Férussac, Prodrome, 377.

Bulimus ventricosus, Draparnaud.

Bulimus variabilis, Hartman.

Helix acuta, Webb and Berthelot.

The narrow black band which encircles the base of this shell is not an unimportant character.



503.
498



504.



505.



506.



507.



508.



509.



510.



511.



512.

BULIMUS.

PLATE LXX.

Species 498. (Mus. Pfeiffer.)

BULIMUS TRUNCATUS. *Bul. testā attenuato-pyramidalī, basi angulatā, ad apicem decollatā, anfractibus octo, angustis, convexis, obliquè concentricè creberrimè elevato-striatis, columellā rectā, tenuiter expansā, aperturā subquadratā, labro tenui; virescente-corneā.*

THE TRUNCATE BULIMUS. Shell attenuately pyramidal, angled at the base, decollated at the apex, whorls eight in number, narrow, convex, obliquely concentrically very closely elevately striated, columella straight, thinly expanded, aperture somewhat square, lip thin; greenish horny.

PFEIFFER, Symbolæ, vol. i. p. 43.

Hab. Mexico.

This remarkable species, for the loan of which I am indebted to Dr. Pfeiffer, does not appear to have reached maturity. It is not known to English collectors.

Species 500. (Pl. *Achatina*, XVI. Fig. 77, Mus. Cuming.)

BULIMUS CLAVA. *Bul. testā subulatā, apice papillari, haud umbilicatā, anfractibus decem, lævibus, politis, hic illic longitudinaliter impresso-striatis, suturis marginatis, columellā tenui, parum reflexā, aperturā parviusculā, labro simplici; pellucido-corneā.*

THE CLUB BULIMUS. Shell subulate, papillary at the apex, not umbilicated, whorls ten in number, smooth, polished, here and there longitudinally impressly striated, sutures margined, columella thin, but little reflected, aperture rather small, lip simple; transparent horny.

Hab. —?

The columella of this species is extremely thinly reflected, and the outer lip is rather inclined to be sinuated at the upper part.

Species 501. (Pl. *Achatina*, XVII. Fig. 81. Mus. Cuming.)

BULIMUS CEREUS. *Bul. testā subulatā, umbilicatā, tenui, anfractibus decem, convexis, arcuatim concentricè striatis, columellā reflexā, aperturā parvā, labro simplici; pellucido-stramineā.*

THE WAXEN BULIMUS. Shell subulate, umbilicated, thin,

whorls ten in number, convex, arcuately concentrically striated, columella reflected, aperture small, lip simple; transparent straw-colour.

Hab. Moradabad, India.

I venture to distinguish this from the *B. gracilis*, from which, in comparison with authentic specimens collected by Mr. Benson, it varies in form, the whorls being of a more bubble-like inflated growth.

Species 502. (Pl. *Achatina*, XVIII. Fig. 95. Mus. Cuming.)

BULIMUS COLUMELLA. *Bul. testā subulatā, haud umbilicatā, apice papillari, anfractibus undecim ad duodecim, minutissimè obliquè striatis, ad suturas subtiliter crenulatis, columellā vix reflexā, aperturā parvā, labro simplici; pellucido-corneā, nitente.*

THE LITTLE COLUMN BULIMUS. Shell subulate, not umbilicated, papillary at the apex, whorls eleven to twelve in number, very minutely obliquely striated, finely crenulated at the sutures, columella but little reflected, aperture small, lip simple; transparent horny, shining.

PHILIPPI, Abbild. und Besch. Bul. pl. 2. f. 7.

Hab. Brazil.

This approaches very closely to the *B. sylvaticus*. It is a transparent turreted shell, very finely striated and delicately puckered at the sutures.

Species 503. (Pl. *Achatina*, XX. Fig. 113. Mus. Cuming.)

BULIMUS JAMAICENSIS. *Bul. testā subulatā, angustā, haud umbilicatā, anfractibus octo, planiconvexis, hic illic impresso-striatis, columellā tenuiter reflexā, aperturā minutā, labro simplici; pellucido-corneā.*

THE JAMAICA BULIMUS. Shell subulate, narrow, not umbilicated, whorls eight in number, flatly convex, here and there impressly striated, columella thinly reflected, aperture very small, lip simple; transparent horny.

Hab. Jamaica.

An extremely bright transparent shell in which the columellar axis of the whorls is visible throughout.

July, 1849.

Species 504. (Mus. Pfeiffer.)

BULIMUS OBESATUS. *Bul. testā cylindraceo-oblongā, sub-obesā, compressè umbilicatā, anfractibus septem, obliquè corrugato-striatis, columellā labroque subincrassatis, latè expansis, aperturā suborbiculari; albidā, epidermide olivaceo-corneā, nitente, indutā.*

THE STOUT BULIMUS. Shell cylindrically oblong, rather stout, compressly umbilicated, whorls seven in number, obliquely corrugately striated, lip and columella somewhat thickened, broadly expanded, aperture nearly orbicular; whitish, covered with a shining olive-horny epidermis.

WEBB and BERTHELOT, Syn. p. 318.

Helix obesata, Férussac.

Hab. Canary Islands.

Of a cylindrical Pupiform shape like the Syrian and Lycian species, but covered with a dark shining olive epidermis.

Species 505. (Mus. Pfeiffer.)

BULIMUS BÆTICATUS. *Bul. testā ovato-conicā, tenuiculā, compressè umbilicatā, anfractibus septem, convexis, peculiariter corrugato-granulatis, aperturā suborbiculari, columellā labroque expansis; sordidè castaneā.*

THE TAWNY BULIMUS. Shell ovately conical, rather thin, compressly umbilicated, whorls seven in number, convex, peculiarly corrugately granulated, aperture nearly orbicular, lip and columella expanded; dull chestnut.

WEBB and BERTHELOT, Syn. p. 318.

Helix (Cochlogena) bæticata, Férussac.

Bulimus corneus, Menke.

Hab. Island of St. Thomas, West Indies; Férussac. Canary Islands; Webb.

Curiously granulated throughout, whilst the apex rises with a papillary appearance.

Species 506. (Mus. Pfeiffer.)

BULIMUS ZIEBMANNI. *Bul. testā fusiformi-oblongā, compressè umbilicatā, anfractibus septem, lævibus, columellā reflexā, aperturā parviusculā, labro effuso, vix reflexo; albā, fasciis cæruleo-nigricantibus brevibus, multò interruptis, cingulatā.*

ZIEBMAN'S BULIMUS. Shell fusiformly oblong, compressly umbilicated, whorls seven in number, smooth, columella reflected, aperture rather small, lip effused, scarcely reflected; white, encircled with short blue-black bands, much interrupted.

PFEIFFER, MSS.

Hab. —?

Dr. Pfeiffer has favoured me with this shell for publication, and I am not aware that he has described it.

Species 507. (Mus. Pfeiffer.)

BULIMUS PHYSOIDES. *Bul. testā ventricosovovatā, tenui, inflatā, vix umbilicatā, anfractibus quinque, longitudinaliter rugoso-striatis, ad suturas plicato-crenulatis, columellā reflexā, labro simplici; flavicante, albivariegatā.*

THE PHYSA-LIKE BULIMUS. Shell ventricosely ovate, thin, inflated, scarcely umbilicated, whorls five in number, longitudinally roughly striated, plicately crenulated at the sutures, columella reflected, lip simple; yellowish, mottled with white.

MENKE, MSS.

Hab. —?

Received from Dr. Pfeiffer with the above name. I fear it is an immature shell.

Species 508. (Mus. Pfeiffer.)

BULIMUS HEGEWISCHI. *Bul. testā subacuminato-ovatā, tenuiculā, vix umbilicatā, anfractibus quinque ad sex, irregulariter impresso-striatis, columellā reflexā, labro simplici; carneo-albicante, fusco hic illic sparsim strigatā, intus pallidè aurantiā.*

HEGEWISCH'S BULIMUS. Shell somewhat acuminate, ovate, rather thin, scarcely umbilicated, whorls five to six in number, irregularly impressly striated, columella reflected, lip simple; flesh-white, sparingly streaked here and there with brown, pale orange within.

PFEIFFER, MSS.

Hab. —?

For this species I am also indebted to Dr. Pfeiffer.

Species 509. (Mus. Pfeiffer.)

BULIMUS ZOOGRAPHICUS. *Bul. testā subfusiformi-oblongā, tenui, vix umbilicatā, anfractibus sex, obsoletè striatis et indentatis, columellā reflexā, aperturā subeffusā, labro simplici; sordidè albā, cinereo-nigricante maculatā et variegatā.*

THE ZOOGRAPHIC BULIMUS. Shell somewhat fusiformly oblong, thin, scarcely umbilicated, whorls six in number, obsoletely striated and indented, columella reflected, aperture somewhat effused, lip simple; dull white, blotched and variegated with ashy black.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 313. pl. 40. f. 6 to 8.

Hab. Eastern Cordilleras of Bolivia (in a ravine between the Provinces of Moxos and Cochabamba); D'Orbigny.

This appears to be a species of extremely rare occurrence. The specimen here represented from Dr. Pfeiffer's cabinet is one of those collected by D'Orbigny.

Species 510. (Mus. Pfeiffer.)

BULIMUS LYMNOIDES. *Bul. testā subfusiformi-ovatā, solidiusculā, vix umbilicatā, anfractibus sex, subtilissimè rugoso-striatis, columellā reflexā, aperturā subeffusā; olivaceo-fuscā, nitente, suturis albimarginatis.*

THE LYMNEA-LIKE BULIMUS. Shell somewhat fusiformly ovate, rather solid, scarcely umbilicated, whorls six in number, very finely roughly striated, columella reflected, aperture slightly effused; olive-brown, shining, sutures edged with white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 260.

Hab. Guadeloupe, St. Vincent.

Externally, this shell has a very delicate satiny appearance.

Species 511. (Mus. Pfeiffer.)

BULIMUS TURRITELLA. *Bul. testā oblongo-ovatā, tenui, leviter ventricosā, umbilicatā, anfractibus sex, rugoso-striatis, columellā latè reflexā, labro simplici; pel-lucido-albā, lineis opaco-albis profusè longitudinaliter notatā.*

THE LITTLE TOWER BULIMUS. Shell oblong-ovate, thin, slightly ventricose, umbilicated, whorls six in number, roughly striated, columella broadly reflected, lip simple; transparent white, profusely longitudinally marked with opaque white lines.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 274. pl. 33. f. 12 to 14.

Hab. Province of Chiquitos, Bolivia (in a small plain near the ancient Mission of St. Juan); D'Orbigny.

This species is also illustrated from one of M. D'Orbigny's specimens in the collection of Dr. Pfeiffer.

Species 512. (Mus. Pfeiffer.)

BULIMUS INFLATUS. *Bul. testā subgloboso-ovatā, solidiusculā, umbilicatā, anfractibus quinque, rotundatis, rugoso-striatis, columellā subarcuatā, latè reflexā, aperturā ovali, labro simplici; sordidè albā.*

THE INFLATED BULIMUS. Shell somewhat globosely ovate, rather solid, umbilicated, whorls five in number, rounded, roughly striated, columella slightly arched, broadly reflected, aperture oval, lip simple; dead-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 230.

Helix (Cochlogena) costulata, Férussac.

Bulimus costulatus, Potiez and Michaud.

Hab. New Holland; Lamarck.

I follow Dr. Pfeiffer in adopting Lamarck's name for this species, in consequence of De Férussac's being inappropriate.



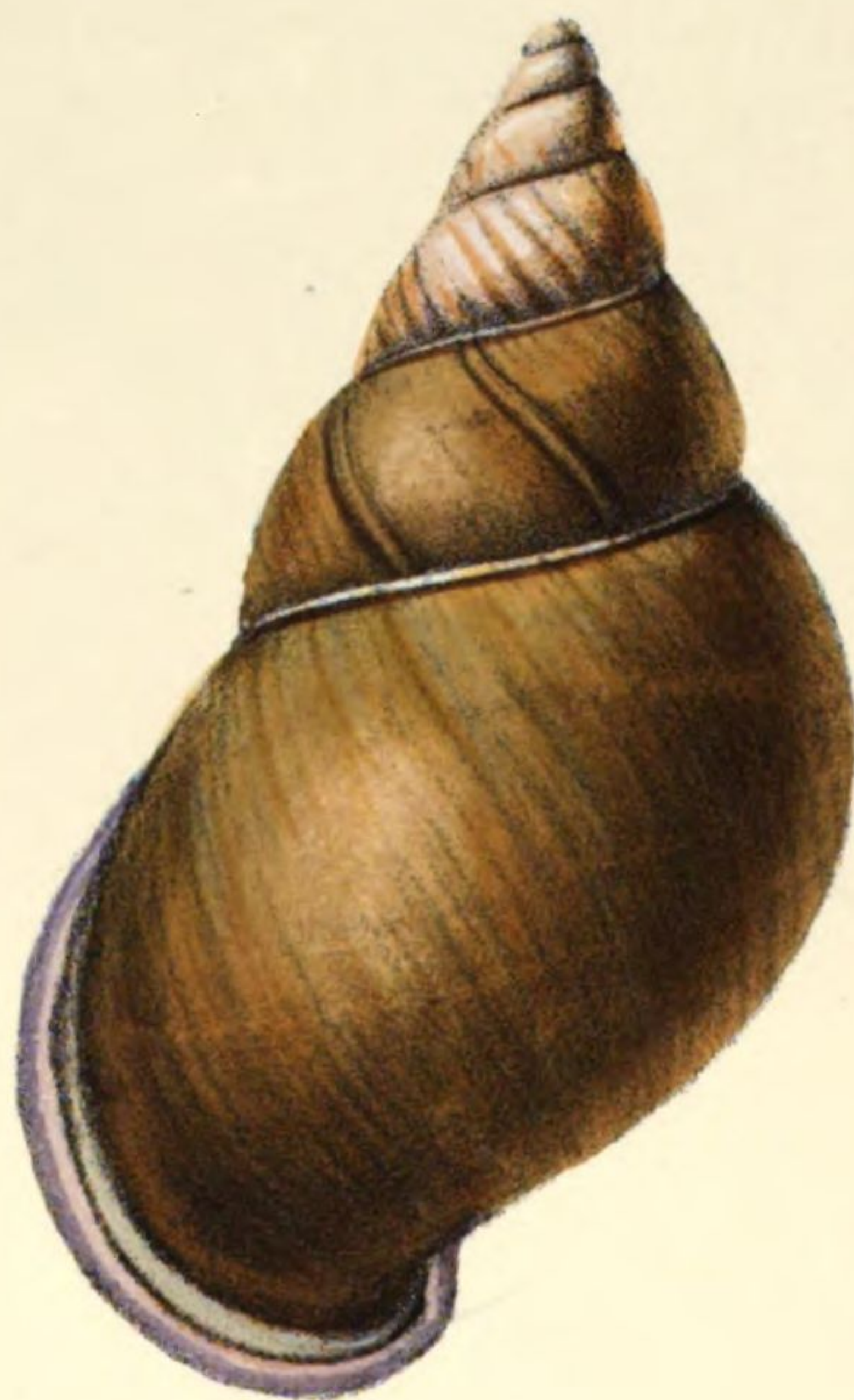
514.



513.



515.



207. b.



516. a.



517.



516. b.

BULIMUS.

PLATE LXXI.

Species 513. (Mus. Cuming.)

BULIMUS SCITULUS. *Bul. testā subfusiformi-oblongā, vix umbilicatā, anfractibus octo, leviter convexis, lævibus, columellā parum reflexā, aperturā subangustā, labro simplici; albidā, purpureo-cæruleo tinctā, basin versus ferrugineo-rufā, lineis subtilibus albis, irregulariter undulatis, creberrimè longitudinaliter notatā.*

THE TRIM BULIMUS. Shell somewhat fusiformly oblong, scarcely umbilicated, whorls eight in number, slightly convex, smooth, columella but little reflected, aperture rather narrow, lip simple; whitish, stained with purple-blue, rust-red towards the base, very closely longitudinally marked with fine, irregularly waved, white lines.

Hab. Chachapoyas, Alto-Peru.

Neatly marked with fine white waved lines upon a purple-blue ground, tinged towards the base with a bright rust-red.

Species 514. (Mus. Cuming.)

BULIMUS CUZCOENSIS. *Bul. testā acuminato-oblongā, subcylindraceutā, subcompressè umbilicatā, anfractibus octo, leviter convexis, sub lente striatis et corrugato-indentatis, columellā reflexā, aperturā parviusculā, labro simplici; fulvescente-spadiceā.*

THE CUZCO BULIMUS. Shell acuminately oblong, somewhat cylindrical, rather compressly umbilicated, whorls eight in number, slightly convex, beneath the lens striated and indented in a wrinkled manner, columella reflected, aperture rather small, lip simple; light fulvous bay.

Hab. Cuzco, Bolivia; W. Lobb.

Of a delicate nankeen colour throughout.

Species 515. (Mus. Cuming.)

BULIMUS PRÆTEXTUS. *Bul. testā acuminato-oblongā, subcylindraceutā, subampliter umbilicatā, anfractibus octo, leviter convexis, lævibus vel obscurè indentatis, columellā latissimè reflexā, aperturā parviusculā, labro simplici, paululum reflexo; lacteā, cæruleo nebulatā, maculis rotundatis albidis promiscuè floccatā, lineis minutis albidis undulatis longitudinaliter creberrimè notatā, apice fuscescente.*

THE LACED BULIMUS. Shell acuminately oblong, some-

what cylindrical, rather largely umbilicated, whorls eight in number, slightly convex, smooth or obscurely indented, columella very broadly reflected, aperture rather small, lip simple, a little reflected; cream-colour, clouded with blue, promiscuously flaked with round whitish spots, and very closely longitudinally marked with minute waved whitish lines, apex tinged with light rusty-brown.

Hab. Andes of Caxamarca, Peru; W. Lobb.

A delicate blue-clouded shell, sprinkled with a few white lines, which are irregularly waved and sometimes ramified like veins.

Species 207. (Pl. LXXI. Fig. 207, *b*, and Pl. LXXII.

Fig. 207, *c*. Mus. Cuming.)

BULIMUS LABEO. It is with much gratification that I am enabled to give an original figure of the *Bulimus laeo*, illustrated at Pl. XXXV, from a figure in the Zoological Journal. This shell, from the Cumingian collection, which I take to be identical with the lost specimen, is of a lighter olive colour, but has a similar narrow dark band beneath the sutures, the columella is similarly plicately twisted, the lip is less thickened but of the same rich purple-black enamel, destitute, however, of the opaque bubble-like dots, which are of seldom specific importance.

It was collected by Mr. Lobb at Limabamba, Peru; a district seldom visited by travellers, and the same in which Lieut. Mawe obtained the original specimen.

Species 516. (Mus. Cuming.)

BULIMUS LOBBII. *Bul. testā subcylindraceuto-oblongā, compressè umbilicatā, aperturam versus subobliquè tumidā, anfractibus octo, leviter convexis, lævibus vel obscurè indentatis, columellā latè expansā, aperturā obliquè effusā, labro reflexo; albā, vittis longitudinalibus fuscescentibus et purpureo-castaneis irregulariter conspicuè pictā, pone labrum et aperturæ fauce purpureo-nigricante.*

LOBB'S BULIMUS. Shell somewhat cylindrically oblong, compressly umbilicated, rather obliquely swollen towards the aperture, whorls eight in number, slightly convex, smooth or obscurely indented, columella broadly expanded, aperture obliquely effused,

July, 1849.

lip reflected; white, conspicuously irregularly painted with longitudinal light-brown and purple-chestnut ribands, interior of the aperture and behind the lip purple-black.

Hab. Banks of the Maranon near Balsas, Peru (on branches of a species of *Jatropha*); W. Lobb.

This fine species is of a delicate cream-white, striped longitudinally by distinct ribands of light brown and dark purple chestnut, without any of intermediate tint. Immediately behind the lip there is more of the dark purple-chestnut, approaching to black, and the interior of the aperture is coloured with the same, having a somewhat metallic hue.

I have the pleasure to name it in honour of Mr. Lobb, botanical collector of Messrs. Veitch & Son, the eminent nurserymen of Exeter, to whose zeal in the pursuit of natural history, the species of this, and the two following plates, bear honourable testimony.

Species 517. (Mus. Cuming.)

BULIMUS PURPURATUS. *Bul. testā subacuminato-ovatā, compressè umbilicatā, anfractibus sex, convexis, longitudinaliter rugoso-corrugatis, ad suturas plicato-crenatis, anfractu ultimo ventricosiusculo, columellā reflexā, labro simplici; purpureo-fuscā, lineis albidis hic illic longitudinaliter interruptā, basi et aperturæ fauce albidā.*

THE PURPLE-STAINED BULIMUS. Shell somewhat acuminately ovate, compressly umbilicated, whorls six in number, convex, longitudinally rugosely wrinkled, plicately crenated at the sutures, last whorl rather ventricose, columella reflected, lip simple; purple-brown, longitudinally interrupted here and there with whitish lines, white at the base and within the aperture.

Hab. Andes of Caxamarca, Peru; Mr. W. Lobb.

A rather stout rough shell, stained with dark purple-brown.



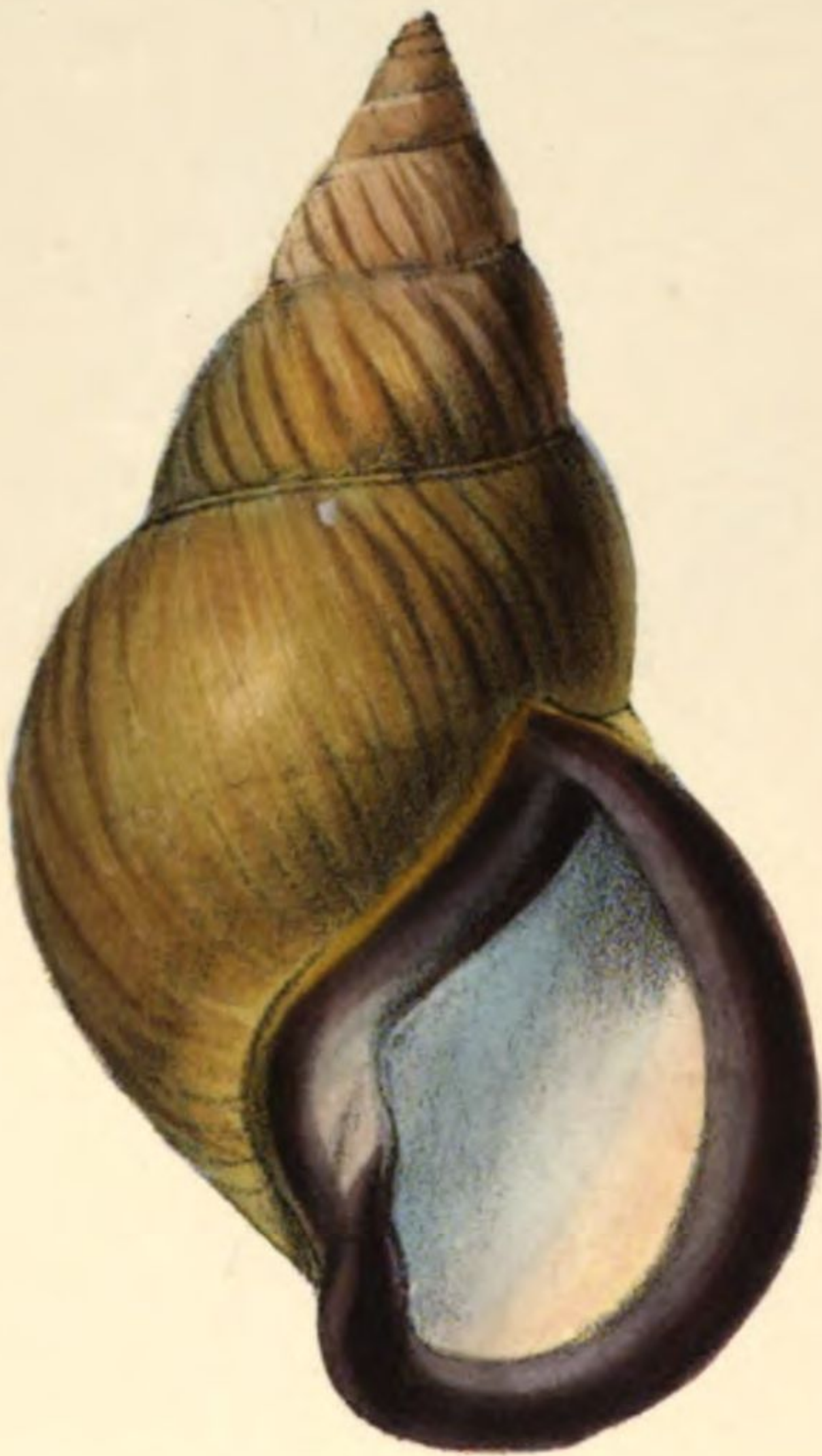
519.



518.



520.



207. c.



521. a.



522.



521. b.

BULIMUS.

PLATE LXXII.

Species 518. (Mus. Cuming.)

BULIMUS RHODOLARYNX. *Bul. testā acuminato-ovatā, basin versus obliquè ventricosā, ampliter umbilicatā, anfractibus septem ad octo, subrotundatis, lævibus, sub lente striis obliquis elevatiusculis et spiralibus incisiss minutè decussatis, aperturā suborbiculari, columellā labroque latè reflexis; roseo-albicante, intus purpureo-roseā.*

THE RED-THROAT BULIMUS. Shell acuminate ovate, obliquely ventricose towards the base, largely umbilicated, whorls seven to eight in number, somewhat rounded, smooth, minutely decussated, beneath the lens, with slightly raised oblique striæ and engraved spiral ones, aperture nearly orbicular, lip and columella broadly reflected; rose-white, interior purple-rose.

Hab. Banks of the Aparimao, Alto-Peru; W. Lobb.

Distinguished by its very delicate purple-rose interior, the colour of which is seen through the substance of the shell.

Species 519. (Mus. Cuming.)

BULIMUS DECUSSATUS. *Bul. testā acuminato-oblongā, basi rotundatā, subcylindraceā, compressè umbilicatā, anfractibus octo, leviter convexis, longitudinaliter corrugato-striatis, ad suturas subcrenulatis, columellā latè reflexā, labro tenui, simplici; pallidè stramineā, strigis brevibus rufo-fuscis, longitudinalibus et obliquis, fasciatim decussatis, peculiariter notatā.*

THE DECUSSATED BULIMUS. Shell acuminate oblong, rounded at the base, somewhat cylindrical, compressly umbilicated, whorls eight in number, slightly convex, longitudinally striated in a wrinkled manner, slightly wrinkled at the sutures, columella broadly reflected, lip thin, simple; light straw-colour, peculiarly marked with short red-brown longitudinal and oblique streaks crossing over each other in bands.

Hab. Andes of Caxamarca, Peru; W. Lobb.

Singularly characterized by the bands of short brown streaks, ranging obliquely in the direction opposed to the lines of growth.

Species 520. (Mus. Cuming.)

BULIMUS MYRISTICUS. *Bul. testā acuminato-oblongā, basi subobliquè rotundatā, compressè umbilicatā, anfractibus octo ad novem, planulato-convexis, longitudinaliter striatis, infra suturas subcrenulatis, columellā latè reflexā, labro simplici; albidā, vittis irregularibus castaneis et fuscis longitudinaliter confertim pictā.*

THE NUTMEG BULIMUS. Shell acuminate oblong, somewhat obliquely rounded at the base, compressly umbilicated, whorls eight to nine in number, rather flatly convex, longitudinally striated, slightly crenulated beneath the sutures, columella broadly reflected, lip simple; whitish, closely longitudinally painted with irregular chestnut and pale brown ribands.

Hab. Andes of Caxamarca, Peru; W. Lobb.

This differs but little from the preceding species in form and detail of sculpture; yet there is a marked distinction in the style of painting.

Species 521. (Mus. Cuming.)

BULIMUS ALTO-PERUVIANUS. *Bul. testā acuminato-ovatā, tenuiculā, ampliter compressè umbilicatā, aperturam versus obliquè ventricosā, inflatā, anfractibus septem, convexis, apicem versus creberrimè elevato-striatis, striis spiralibus incisiss sub lente minutè decussatis, columellā latè verticaliter reflexā, aperturā obliquè suborbiculari, labro effuso, non reflexo; fulvescente-lacteā, apicem versus cærulescente, lineis castaneis subdistantibus irregulariter longitudinaliter notatā, maculis brevibus contrariè obliquis bifasciatim pictā, macularum serie unicā infra suturas.*

THE ALTO-PERUVIAN BULIMUS. Shell acuminate ovate rather thin, largely compressly umbilicated, obliquely ventricose towards the aperture, inflated, whorls seven in number, convex, very closely elevatedly striated towards the apex, minutely decussated, beneath the lens, with engraved spiral striæ, columella broadly vertically reflected, aperture obliquely suborbicular, lip effused, not reflected; fulvous cream-colour, bluish towards the apex, irregularly longitudinally marked with rather distant chestnut lines, and painted with two bands of spots arranged contrarily obliquely, with a single row of spots also beneath the sutures.

July, 1849.

Hab. Chachapoyas, Alto-Peru; W. Lobb.

The painting of this delicate and boldly convoluted shell is characterized by two bands of short oblong chestnut spots or dashes, ranging obliquely in a direction contrary to that of the painted lines, as in *B. Sowerbyi*.

Species 522. (Mus. Cuming.)

BULIMUS ALUTACEUS. *Bul. testā oblongo-ovatā, umbilicatā, anfractibus septem, convexis, creberrimè corrugato-striatis, aperturā ovali, columellā reflexā, labro vix reflexo;*

intensè ustulato-castaneā, zonulā unicā albā medio cingulatā, labro albo.

THE LEATHERY BULIMUS. Shell oblong ovate, umbilicated, whorls seven in number, convex, very closely corrugately striated, aperture oval, columella reflected, lip but slightly reflected; very dark burnt chestnut, encircled round the middle with a single white zone, lip white.

Hab. Cuzco, Bolivia; W. Lobb.

The entire surface of this shell is sculptured longitudinally with very closely packed crinkled striæ.



523.



524.



525.



526.



527. a.



527. b.



528.

G.B.S. del et lith.

R.B. & R. imp.

BULIMUS.

PLATE LXXIII.

Species 523. (Mus. Cuming.)

BULIMUS CLAUSILIOIDES. *Bul. testā elongato-turritā, subcylindrā, sinistrali, compressē umbilicatā, anfractibus novem, supernē obscurē costatis, longitudinaliter creberrimē et minutissimē rugoso-striatis, columellā verticaliter reflexā, aperturā subquadratā, labro tenui, simplici; colore murino.*

THE CLAUSILIA-LIKE BULIMUS. Shell elongately turreted, somewhat cylindrical, sinistral, compressly umbilicated, whorls nine in number, obscurely ribbed round the upper part, longitudinally very closely and very minutely roughly striated, columella vertically reflected, aperture somewhat square, lip simple; mouse-colour.

Hab. Andes of Caxamarca, Peru; W. Lobb.

Very like a *Clausilia* in form, and of a silken aspect, arising out of the very close and minute development of longitudinal striae.

Species 524. (Mus. Cuming.)

BULIMUS DEPSTUS. *Bul. testā subacuminato-ovatā, compressē umbilicatā, anfractibus septem, rotundatis, lævibus, supernē depressiusculis, minutē plicato-crenulatis, columellā reflexā, aperturā parviusculā, labro simplici; intus extusque ustulato-fuscā, hic illic saturatiore strigatā.*

THE TANNED BULIMUS. Shell subacuminately ovate, compressly umbilicated, whorls seven in number, slightly depressed round the upper part, minutely plicately crenulated, columella reflected, aperture rather small, lip simple; light scorched brown within and without, streaked here and there of a darker colour.

Hab. Chachapoyas, Alto-Peru; W. Lobb.

A thin shell approaching in form and colouring to the *Bulimus nux*, from which it differs in being of a lighter structure and having a more rounded aperture.

Species 525. (Mus. Cuming.)

BULIMUS NIGROPILEATUS. *Bul. testā acuminato-ovatā, subampliter umbilicatā, anfractibus septem, convexis, obtusē subrugoso-striatis, columellā verticaliter reflexā,*

aperturā ovali, labro simplici; albidā, basin versus obsoletē fusco-fasciatā, apice nigro.

THE BLACK-TIPPED BULIMUS. Shell acuminate ovate, rather largely umbilicated, whorls seven in number, convex, obtusely somewhat roughly striated, columella vertically reflected, aperture oval, lip simple; whitish, obsoletely banded with brown towards the base, apex black.

Hab. Chachapoyas, Alto-Peru; W. Lobb.

It is probable from the faintly banded appearance of this shell, that this is but the pale variety of a darker type.

Species 526. (Mus. Cuming.)

BULIMUS FOVEOLATUS. *Bul. testā oblongo-ovatā, tenuiculā, subventricosā, haud umbilicatā, ad apicem obtusā, anfractibus quinque ad sex, convexis, longitudinaliter obtusē plicato-striatis, punctis oblongis spiraliter lineatim exsculptis, infra suturas plicato-crenulatis, apicem versus peculiariter foveolatis, suturis rudibus, anfractu ultimo obliquē descendente, columellā latā, depressiusculā, obliquē recedente, aperturā oblongo-ovalī, labro subincrassato, vix reflexo; intensē olivaceo-brunneā, infra suturas pallidē unifasciatā, suturis albidis, columellā labroque cærulescente-albis, aperturæ fauce iridescente-lilaceā.*

THE PITTED BULIMUS. Shell oblong-ovate, rather thin, slightly ventricose, not umbilicated, obtuse at the apex, whorls five to six in number, convex, longitudinally obtusely plicately striated, spirally engraved with lines of oblong punctures, plicately crenulated beneath the sutures, peculiarly pitted towards the apex, sutures rude, last whorl descending obliquely, columella broad, rather depressed, obliquely receding, aperture oblong-oval, lip somewhat thickened, but little reflected; very dark olive-brown, with a single pale band beneath the sutures, sutures whitish, lip and columella bluish-white, interior of the aperture iridescent lilac.

Hab. Vitoe, near Sarma, Alto-Peru; W. Lobb.

This is the species which Dr. Pfeiffer has assigned to the *Bulimus Mahogani*, of Sowerby, Conch. Illus. f. 59, of which I can find no description or tidings.

July, 1849.

On comparing the shell under consideration with Mr. Sowerby's figure, it will be found to be of a more oblong form, more acuminate at the apex, and very peculiarly pitted round the upper sutures, reminding one very much of the indentations in the shells of *Phorus*.

Species 527. (Fig. a. b, Mus. Cuming.)

BULIMUS PRIMULARIS. *Bul. testā acuminato-ovatā, tenuiculā, subventricosā, umbilicatā, anfractibus septem, lævibus, columellā tenui, reflexā, labro simplici; albidā, basin versus vividè luteā, fasciis castaneo-nigris quatuor aut pluribus, nonnullis multo interruptis, cingulatā.*

THE PRIMROSE-COLOURED BULIMUS. Shell acuminate ovate, rather thin, somewhat ventricose, umbilicated, whorls seven in number, smooth, columella thin, reflected, lip simple; whitish, bright yellow towards the base, encircled towards the base, with four or more chestnut-black bands, some of which are much interrupted.

Hab. Chachapoyas, Alto-Peru; W. Lobb.

Of simple structure, but abundantly characterized by its bright primrose colour and dark basal bands.

Species 528. (Mus. Cuming.)

BULIMUS COLUMELLARIS. *Bul. testā cylindraneo-elongatā, haud umbilicatā, anfractibus septemdecim ad octodecim, planis, angustis, obliquè subobsoletè striatis, anfractu ultimo ad basin subangulato, columellā tortuosā, leviter recedente, aperturā subquadratā, ad basin effusā; roseo-albicante, apicem versus livido-cærulescente et rufescente.*

THE LITTLE-COLUMN BULIMUS. Shell cylindrically elongated, not umbilicated, whorls seventeen to eighteen in number, flattened, narrow, obliquely rather obsoletely striated, last whorl somewhat angled at the base, columella twisted, slightly receding, aperture nearly square, effused at the base; pinkish-white, livid blue and red towards the apex.

Hab. Andes of Caxamarca, Peru, (under stones at an elevation of 12,000 feet); W. Lobb.

An interesting *Pupa*-like species, distinguished by its square effuse aperture and erect columnar form.



530. a.



529.



530. b.



532.



531.



533.



535.



534.



536.



537.

BULIMUS.

PLATE LXXIV.

Species 529. (Mus. Cuming.)

BULIMUS DEPICTUS. *Bul. testâ subfusiformi-oblongâ, vix umbilicatâ, anfractibus sex, lævibus, vel, sub lente, longitudinaliter tenuistriatis, columellâ reflexâ, aperturâ sub-oblongâ, labro simplici; luteo-albâ, cæruleo-virescente longitudinaliter variegatâ, fasciis duabus angustis in anfractu ultimo prætermittente.*

THE PAINTED BULIMUS. Shell somewhat fusiformly oblong, scarcely umbilicated, whorls six in number, smooth, or, beneath the lens, finely striated, columella reflected, aperture rather oblong, lip simple; yellowish white, longitudinally variegated with blue-green, leaving two narrow bands round the last whorl.

Hab. New Granada.

A prettily painted species collected in the above named locality by Mr. Linden.

Species 530. (Fig *a* and *b*, Mus. Philippi.)

BULIMUS RECLUZIANUS. *Bul. testâ subfusiformi-oblongâ, vix umbilicatâ, anfractibus sex, convexis, lineis subtilibus confertim spiraliter incis, columellâ tenuè reflexâ, labro simplici; corneo-albidâ, strigis latis irregularibus castaneis et griseo-violaceis ornatâ.*

RECLUZ'S BULIMUS. Shell somewhat fusiformly oblong, scarcely umbilicated, whorls six in number, convex, closely spirally engraved with fine lines, columella thinly reflected, lip simple; flesh-white, ornamented with irregular chestnut and grey-violet streaks.

PFEIFFER, Zeitschr. fur Malac. 1847. p. 82.

Hab. — ?

A very distinct and characteristic species, for the loan of which I am indebted to Dr. Philippi of Cassel.

Species 531. (Mus. Belcher.)

BULIMUS SOLIVAGUS. *Bul. subpyramidal-ovatâ, crassiusculâ, basi subventricosâ, haud umbilicatâ, anfractibus sex, lævibus, columellâ paululum incrassatâ, arcuatâ, labro reflexo; intensè castaneo-purpureâ, epidermide albidâ hydrophanâ undique indutâ.*

THE WANDERING BULIMUS. Shell somewhat pyramidally ovate, rather thick, slightly ventricose, not umbilicated, whorls six in number, smooth, columella a little

thickened, arched, lip reflected; deep chestnut-purple, covered throughout with a whitish hydrophanous epidermis.

Hab. Philippine Islands; Belcher.

Distinct from any of the species collected in the same locality by Mr. Cuming.

Species 532. (Mus. Cuming.)

BULIMUS LILACINUS. *Bul. testâ fusiformi-oblongâ, compressè umbilicatâ, anfractibus septem, convexis, longitudinaliter plicato-striatis, columellâ reflexâ, paululum appressâ, labro vix reflexo; albidâ, purpureo intus undique fasciatâ, columellâ vividè violaceo-purpureâ.*

THE LILAC BULIMUS. Shell fusiformly oblong, compressly umbilicated, whorls seven in number, convex, longitudinally plicately striated, columella reflected, a little appressed, lip slightly reflected; whitish, banded throughout with violet-purple, columella deep violet-purple.

Hab.

There may be other varieties of this very interesting species. The present is lined interiorly with deep purple bands which have an obscure blackish appearance on the outside.

Species 533. (Mus. Pfeiffer.)

BULIMUS DUNKERI. *Bul. testâ acuminato-oblongâ, sub-inflatâ, umbilicatâ, anfractibus sex, longitudinaliter rugoso-striatis, lineis spiralibus impressis obsoletè reticulatâ, columellâ latè reflexâ, aperturâ ovali, labro tenui, vix reflexo; albidâ, spadiceo et cinereo-fusco variegatâ et nebulatâ.*

DUNKER'S BULIMUS. Shell acuminately oblong, slightly inflated, umbilicated, whorls six in number, longitudinally roughly striated, obsoletely reticulated with spiral impressed lines, columella broadly reflected, aperture oval, lip thin, scarcely reflected; whitish, variegated and clouded with bay and ash-brown.

PFEIFFER, Abbild. und Besch. Bulimus, Pl. 4. f. 10.

Hab. Mexico.

Mottled and streaked with ash-brown upon a whitish ground, leaving a few light spots or dashes upon the darker parts.

August, 1849.

Species 534. (Mus. Cuming.)

BULIMUS SUCCINCTUS. *Bul. testā pyramidalī-conicā, crassiusculā, haud umbilicatā, anfractibus septem, convexis, lævibus; albā, anfractibus fasciā angustā castaneā supra et infra suturas cingulatā, anfractu ultimo infra fasciā inferiori ustulato-castaneo tinctā, circa columellam intensiore.*

THE UNDER-GIRT BULIMUS. Shell pyramidally conical, rather thick, not umbilicated, whorls seven in number, convex, smooth; white, whorls encircled above and below the sutures with a narrow chestnut band, last whorl stained below the lower band with burnt chestnut, darker round the umbilicus.

Hab. Philippines.

The loss of its epidermis prevents me from giving a complete description of this species; but the peculiarity of form and colouring abundantly testifies that it is distinct from any hitherto known.

Species 535. (Mus. Cuming.)

BULIMUS AMBUSTUS. *Bul. testā oblongo-ovatā, vix umbilicatā, anfractibus sex, lævibus, vel, sub lente, creberrimè striatis, columellā reflexā, appressā, recedente, aperturā subdilatātā, labro simplici; albidā, strigis ustulato-fuscis, nunc latiusculis, nunc angustis, irregulariter pictā.*

THE SCORCHED BULIMUS. Shell oblong-ovate, scarcely umbilicated, whorls six in number, smooth, or, beneath the lens, very closely striated, columella reflected, appressed, receding, aperture slightly dilated, lip simple; whitish, irregularly painted with burnt-brown streaks, some narrow, some rather broad.

Hab. — ?

The base of the aperture obtains a slightly dilated form, the receding growth of the columella.

Species 537. (Mus. Cuming.)

BULIMUS CERUSSATUS. *Bul. testā acuminato-oblongā, subampliter compressè umbilicatā, anfractibus septem, convexis, lævibus, columellā latissimā, vix reflexā, aperturā subobliquè productā, labro simplici; cretaceo-albā, strigis perpaucis undulatis fuscis intus pictā.*

THE WHITE-LEAD BULIMUS. Shell acuminate oblong, rather largely compressly umbilicated, whorls seven in number, convex, smooth, columella very broad, scarcely reflected, aperture rather obliquely produced, lip simple; chalk-white, painted interiorly with a few brown waved streaks.

Hab. — ?

Painted interiorly with scattered brown waved streaks, which show somewhat obscurely through the substance of the shell.

Species 537. (Mus. Pfeiffer.)

BULIMUS SPADICEUS. *Bul. testā globoso-conicā, tenuiculā, umbilicatā, basi subplanulatā, anfractibus sex, convexo-declivibus, suturis subimpressis, subtilissimè rugoso-striatis, anfractu ultimo obsoletè carinato, columellā brevi, latè reflexā, labro simplici; intensè rufo-castaneā, aperturæ fauce iridescente.*

THE DARK-BAY BULIMUS. Shell globosely conical, rather thin, umbilicated, somewhat flat at the base, whorls six in number, convexly slanting, sutures rather impressed, very finely roughly striated, last whorl obsoletely keeled, columella short, broadly reflected, lip simple; deep reddish chestnut, interior of the aperture iridescent.

MENKE, Pfeiffer, *Symbolæ*, vol. iii. p. 17.

Hab. Natal, South Africa (in the woods near the river Umlaas); *Krauss*.

One of the many interesting new species of shells collected in the vicinity of Port Natal, by the indefatigable Dr. *Krauss* of Stutgard.



538.



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544.



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547.

BULIMUS.

PLATE LXXV.

Species 538. (Mus. Pfeiffer.)

BULIMUS GASTRUM. *Bul. testâ obeso-ovatâ, subcylindraceâ, compressè umbilicatâ, anfractibus sex, convexiusculis, obliquè striatis, columellâ brevi, subdilatâtâ, aperturâ semiovali, labro plano-reflexo; pellucido-albâ, epidermide lutescente indutâ, suturis opaco-albis.*

THE SWOLLEN BULIMUS. Shell stoutly ovate, somewhat cylindrical, compressly umbilicated, whorls six in number, rather convex, obliquely striated, columella short, rather dilated, aperture semioval, lip flatly reflected; transparent white, covered with a yellowish epidermis, sutures opaque-white.

EHRENBERG, Symb. phys., Pfeiffer Monog. Helic. vol. ii. p. 122.

Hab. Syria.

A swollen Pupa-like species with a small obtuse apex.

Species 539. (Mus. Pfeiffer.)

BULIMUS BARBARUS. *Bul. testâ acuminato-oblongâ, compressè umbilicatâ, anfractibus sex, convexis, obliquè striatis, columellâ labroque vix reflexis; cornèâ, flammis albidis variegatâ.*

THE FOREIGN BULIMUS. Shell acuminate oblong, compressly umbilicated, whorls six in number, convex, obliquely striated, lip and columella but slightly reflected; horny, variegated with whitish flames.

PFEIFFER, Monog. Helicidæ, vol. ii. p. 124.

Helix barbarus, Linnæus.

Bulimus Jeanoti, Terver.

Bulimus Terverii, Forbes.

Hab. Algeria.

Although this shell is of a semitransparent horny substance, the opaque grey-white colouring occupies the larger surface.

Species 540. (Mus. Dunker.)

BULIMUS SOLUTUS. *Bul. testâ turritâ, laxè convolutâ, anfractibus sex, primis quatuor contiguâ, ultimis duobus omninè solutis, longitudinaliter rugoso-striatis, supra et infra angulato-carinatis, carinis lineâ impressâ utrinque marginatis, aperturâ subquadrato-ovatâ, labro simplici; griseo-albicante.*

THE UNLOOSED BULIMUS. Shell turreted, loosely con-

volute, whorls six in number, the first four contiguous, the last two quite unrolled, longitudinally roughly striated, angularly keeled above and below, keels edged on both sides with an impressed line, aperture somewhat squarely ovate, lip simple; greyish-white.

TROSCHEL, Zeitschr. fur Malac. 1847. p. 49.

Hab. Peru.

A curious species for which I am indebted to Dr. Dunker, in which the last two whorls are unrolled after the manner of a *Vermetus*.

Species 541. (Mus. Pfeiffer.)

BULIMUS BERTHELOTI. *Bul. testâ cylindræo-oblongâ, compressè umbilicatâ, apice obtusè elevatâ, anfractibus octo, convexo-planis, obliquè striatis, columellâ latè verticaliter dilatâtâ, aperturâ latiusculâ, labro latè reflexo; sordidè albâ.*

BERTHELOT'S BULIMUS. Shell cylindrically oblong, compressly umbilicated, apex obtusely elevated, whorls eight in number, convexly flattened, obliquely striated, columella broadly vertically dilated, aperture rather broad, lip broadly reflected; dead white.

PFEIFFER, Symbolæ, vol. iii. p. 83.

Hab. Canary Islands.

Very closely allied to the *B. Ehrenbergii* which, probably owing to some misarrangement, is far removed from this species in Dr. Pfeiffer's monograph.

Species 542. (Mus. Dunker.)

BULIMUS RINGENS. *Bul. testâ fusiformi-cylindræâ, compressè umbilicatâ, anfractibus octo, lævibus, aperturâ oblongo-quadratâ, effusâ, conspicuè quadridentatâ; corneo-fuscâ, cinereo-albo strigatâ et variegatâ, aperturâ violaceo-nigricante tinctâ.*

THE GRINNING BULIMUS. Shell fusiformly cylindrical, compressly umbilicated, whorls eight in number, smooth, aperture oblong square, effused, conspicuously four-toothed; horny brown, streaked and variegated with ash white, aperture stained with violet black.

DUNKER, Zeitschr. fur Malac. 1847, p. 83.

Hab. Macahe, Brazil.

The aperture is characterized by having four conspi-

July, 1849.

cuous flattened teeth, of which the interstices are variously stained with violet-black.

Species 543. (Mus. Pfeiffer.)

BULIMUS VARNENSIS. *Bul. testā cylindraceo-elongatā, solidiusculā, compressè umbilicatā, anfractibus decem, plano-convexis, obliquè irregulariter striatis, aperturā parviusculā, columellā labroque dilatatis, non reflexis; albā, intus fuscescēte, apice nigricante.*

THE VARNA BULIMUS. Shell cylindrically elongated, rather solid, compressly umbilicated, whorls ten in number, flatly convex, obliquely irregularly striated, aperture rather small, lip and columella dilated, not reflected; white, brownish within, apex blackish.

FRIVALDSKY, Pfeiffer, Monog. Helicidæ, vol. ii. p. 227.

Hab. Near Varna, Turkey.

Of a clear white, without any indication of marking.

Species 544. (Mus. Pfeiffer.)

BULIMUS MEMBRANACEUS. *Bul. testā subfusiformi-oblongā, tenui, hyalinā, compressè umbilicatā, anfractibus septem, plano-convexis, levibus, sub lente minutè striatis, columellā latè reflexā, depressā, aperturā sub-obliquā, labro simplici, paululum effusā; pellucido-albicante.*

THE MEMBRANACEOUS BULIMUS. Shell somewhat fusiformly oblong, thin, hyaline, compressly umbilicated, whorls seven in number, flatly convex, smooth, minutely striated beneath the lens, columella broadly reflected, depressed, aperture rather oblique, lip simple, a little effused; transparent white.

PHILIPPI, Abbild. und Besch. Conch. *Bul.* Pl. 5. f. 1, 2.

Hab. —?

A delicate transparent white species, probably inhabiting Central America.

Species 545. (Mus. Pfeiffer.)

BULIMUS FRIVALDSKYI. *Bul. testā cylindraceo-oblongā, vix compressè umbilicatā, anfractibus novem, planiusculis, subtiliter obliquè striatis, aperturā parvā, obliquā, semiovali, columellā labroque appressis; pellucido-corneā, crassiusculā.*

FRIVALDSKY'S BULIMUS. Shell cylindrically oblong, but slightly compressly umbilicated, whorls nine in number, rather flattened, finely obliquely striated, aperture small, oblique, semi-oval, lip and columella appressed; transparent horny, rather thick.

PFEIFFER, Zeitschr. fur Malac. 1847, p. 191.

Hab. Natolia, Turkey in Asia.

A small stout horny cylindrical shell of which the surface is rather flattened.

Species 546. (Mus. Pfeiffer.)

BULIMUS COMPACTUS. *Bul. cylindraceo-oblongā, solidiusculā, subcompressè umbilicatā, anfractibus novem ad decem, obliquè ruguloso-striatis, aperturā truncato-ovali, tridentatā; opaco-albā, fuscescēte pallidè strigatā, intus subaurantiā.*

THE COMPACT BULIMUS. Shell cylindrically oblong, rather solid, somewhat compressly umbilicated, whorls nine to ten in number, obliquely roughly striated, aperture truncately oval, three-toothed; opaque-white, faintly streaked with light brown, interior tinged with orange.

FRIVALDSKY, Pfeiffer, Zeitschr. fur Malac, 1848, p. 6.

Hab. Island of Crete.

A slight contraction of the aperture forms a noticeable feature in this species.

Species 547. (Mus. Pfeiffer.)

BULIMUS TRICHODES. *Bul. testā acuminato-oblongā, tenui, umbilicatā, anfractibus octo, subtilissimè granulato-striatis, aperturā ovali, columellā reflexā, labro simplici; olivaceo-corneā, lineis opaco-albis longitudinaliter notatā, pilis brevissimis obsitā.*

THE HAIRY BULIMUS. Shell acuminate oblong, thin, umbilicated, whorls eight in number, very finely granulately striated, aperture oval, columella reflected, lip simple; olive-horny, longitudinally marked with opaque white lines, covered with very short hair.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 277. pl. 33. f. 1-5.

Hab. Province of Santa Cruz, Bolivia; D'Orbigny.

Distinguished by its peculiar hairy covering.



548.



549.



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557.

BULIMUS.

PLATE LXXVI.

Species 548. (Mus. Cuming.)

BULIMUS BURCHELLII. *Bul. testá acuminato-ovatá, vix umbilicatá, anfractibus octo, lævibus vel rudè obsoletè striatis, columellá breviter reflexá, labro simplici; albidá, fuscescente pallidè strigatá.*

BURCHELL'S BULIMUS. Shell acuminate ovate, scarcely umbilicated, whorls eight in number, smooth or rudely obsoletely striated, columella shortly reflected, lip simple; whitish, faintly streaked with brown.

GRAY, Pro. Zool. Soc., 1834. p. 66.

Hab. Cape Natal, South Africa.

I am not very sure that this is the true *B. Burchellii*, of which Mr. Gray describes having seen a number strung together as a necklace. Mr. Cuming has the name attached to it in his cabinet with a mark of doubt, which I am unable to clear up.

Species 549. (Mus. Cuming.)

BULIMUS RECONDITUS. *Bul. testá acuminato-oblongá, tenuiculá, umbilicatá, anfractibus octo, lævibus, vel, sub lente, minutissimè striatis, columellá breviter reflexá, labro simplici; cinereo-albicante, cæruleo-fusco longitudinaliter punctatá et partim strigatá, aperturæ fauce pallidè aurantiá.*

THE CONCEALED BULIMUS. Shell acuminate oblong, rather thin, umbilicated, whorls eight in number, smooth, or, beneath the lens, very minutely striated, columella shortly reflected, lip simple; ashy white, longitudinally dashed and dotted with blue-brown, interior of the aperture tinged with orange.

Hab. — ?

Very prettily marked with dark longitudinal dashes and finely dotted lines.

Species 550. (Mus. Cuming.)

BULIMUS NEURICUS. *Bul. testá acuminato-oblongá, vix umbilicatá, anfractibus septem, lævibus vel, sub lente, minutè striatis, columellá reflexá, labro simplici; pallidè stramineá, fasciá angustá nigricante-castaneá lineáque interruptá cingulatá, anfractu ultimo fasciis duabus cingulato.*

THE GOUTY BULIMUS. Shell acuminate oblong, scarcely umbilicated, whorls seven in number, smooth, or

beneath the lens, minutely striated, columella reflected, lip simple; pale straw colour, encircled with a narrow blackish chestnut band and an interrupted line, last whorl with two bands.

Hab. Taboo, Cape Palmas (near the sea-shore).

The interrupted line encircles the whorls at about the middle, the two bands are round the lower part, the lower band being concealed in all but the last whorl.

Species 551. (Mus. Cuming.)

BULIMUS OBLIQUUS. *Bul. testá subpyramidal-ovatá, umbilicatá, crassiusculá, ad basin obliquè productá, anfractibus septem ad octo, lævibus, aperturá obliquá, columellá labroque latè dilatatis; pallidè rosaceá, anfractu ultimo fasciá castaneá unicá cingulato.*

THE OBLIQUE BULIMUS. Shell somewhat pyramidally ovate, umbilicated, rather thick, obliquely produced at the base, whorls seven to eight in number, smooth, aperture oblique, lip and columella broadly dilated; light pink, with a single chestnut band round the last whorl.

Hab. Bahia,

A pink shell of firm structure, encircled with a conspicuous chestnut band round the last whorl.

Species 552. (Mus. Cuming.)

BULIMUS RUGATUS. *Bul. testá subacuminato-ovatá, umbilicatá, anfractibus septem, subventricosus, subtiliter et creberrimè longitudinaliter rugatis, aperturá subquadrato-sinuatá, columellá reflexá, labro paululum dilatato; olivaceá.*

THE SHRIVELLED BULIMUS. Shell somewhat acuminate ovate, umbilicated, whorls seven in number, rather ventricose, finely and very closely longitudinally shrivelled, aperture somewhat squarely sinuated, columella reflected, lip a little dilated; olive.

Hab. — ?

Chiefly distinguished by its finely shrivelled surface.

Species 553. (Mus. Cuming.)

BULIMUS GELIDUS. *Bul. testá acuminato-ovatá, subampliter umbilicatá, anfractibus octo, convexis, subtilis-*

August, 1849.

simè striatis, columellâ latè reflexâ, labro simplici; pellucido-albâ, lineis numerosis opaco-albis longitudinaliter notatâ.

THE ICY BULIMUS. Shell acuminate ovate, rather largely umbilicated, whorls eight in number, convex, very finely striated, columella broadly reflected, lip simple; transparent white, longitudinally marked with numerous lines of opake white.

Hab. Central America?

Somewhat of a bluish-white tinge, characterized with opake white longitudinal lines.

Species 554. (Mus. Cuming.)

BULIMUS CUNCTATOR. *Bul. testâ subabbreviato-ovatâ, haud umbilicatâ, infernè ventricosâ, anfractibus quinque, convexis, lævibus, columellâ rectâ, labro subincrassato, non reflexo; purpureo-castaneâ, epidermide albidâ hydrophanâ longitudinaliter strigatâ, intus cærulescente.*

THE LOITERER BULIMUS. Shell somewhat abbreviately ovate, not umbilicated, ventricose round the lower part, whorls five in number, convex, smooth, columella straight, lip slightly thickened, not reflected; purple-chestnut, streaked longitudinally with a white hydrophanous epidermis, interior bluish.

Hab. Philippine Islands; Belcher.

This species, collected by Capt. Sir Edward Belcher during the voyage of the Samarang, is quite distinct from any of the same group discovered by Mr. Cuming.

Species 555. (Mus. Cuming.)

BULIMUS DELUMBIS. *Bul. testâ subgloboso-ovatâ, umbilicatâ, anfractibus sex, rotundatis, longitudinaliter rugoso-striatis, columellâ reflexâ, labro simplici; cretaeo-albâ, lineis brevibus ferrugineo-fuscis irregulariter fasciatim pictâ, aperturæ fauce violascente.*

THE FEEBLE BULIMUS. Shell somewhat globosely ovate, umbilicated, whorls six in number, rounded, longitu-

dinally rugosely striated, columella reflected, lip simple; chalk-white, irregularly painted with bands of short rusty-brown lines, interior of the aperture violet.

Hab. — ?

Very delicately tinged with orange and purple violet in the aperture

Species 556. (Mus. Cuming.)

BULIMUS OVULUM. *Bul. testâ ovatâ, crassiusculâ, umbilicatâ, anfractibus sex, convexis, lævibus, vel obscure striatis, columellâ incrassatâ, latè reflexâ, labro reflexo; intus extusque eburneâ.*

THE LITTLE EGG BULIMUS. Shell ovate, rather thick, umbilicated, whorls six in number, convex, smooth, or obscurely striated, columella thickened, broadly reflected, lip reflected; ivory white within and without.

Hab. Philippine Islands; Cuming.

A shell of rather solid growth, without any appearance of colouring.

Species 557. (Mus. Cuming.)

BULIMUS FIDUSTUS. *Bul. testâ acuminato-ovatâ, tenuiculâ, vix umbilicatâ, anfractibus septem, longitudinaliter minutè et creberrimè striatis, columellâ breviter reflexâ, labro tenui, simplici; lutescente-albâ, castaneo latifasciatâ, epidermide tenui corneâ politâ indutâ.*

THE FAITHFUL BULIMUS. Shell acuminate ovate, rather thin, scarcely umbilicated, whorls seven in number, longitudinally minutely and very closely striated, columella shortly reflected, lip thin, simple; yellowish white, broadly banded with chestnut, covered with a thin polished horny epidermis.

Hab. Sebundoi, New Granada; Funck.

An interesting species from New Granada, which does not appear to have been described



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567.

BULIMUS.

PLATE LXXVII.

Species 558. (Mus. Cuming.)

BULIMUS COAGULATUS. *Bul. testā ovatā, tenui, ventricosā, vix umbilicatā, anfractibus quinque, obscurè longitudinaliter plicato-striatis, columellā reflexā, labro simplici; corneo-fuscescente, pellucidā, opaco-albo peculiariter undato-reticulatā.*

THE CURDLED BULIMUS. Shell ovate, thin, ventricose, scarcely umbilicated, whorls five in number, obscurely longitudinally plicately striated, columella reflected, lip simple; transparent horny brown, peculiarly reticulated in a waved manner with opake white.

Hab. Peru.

A light inflated shell distinguished by a peculiarly mottled opake net-work.

Species 559. (Mus. Cuming.)

BULIMUS UMBRATICUS. *Bul. testā acuminato-ovatā, vix umbilicatā, anfractibus sex, longitudinaliter subtilissimè creberrimè elevato-striatis, columellā breviter reflexā, labro tenui, simplici; pellucido-albā, prope apicem fuscescente strigatā.*

THE SLIGHT BULIMUS. Shell acuminately ovate, scarcely umbilicated, whorls six in number, longitudinally very finely elevately striated, columella shortly reflected, lip simple; transparent white, streaked with pale brown near the apex.

Hab. Central America.

It is possible that this may be a light variety of a species of more colour from the indications of marking near the apex.

Species 560. (Mus. Cuming.)

BULIMUS EXORNATUS. *Bul. testā acuminato-ovatā, tenui, vix umbilicatā, anfractibus octo, convexis, levibus, columellā breviter reflexā, aperturā parviusculā, labro simplici; pellucido-fuscā, lineis longitudinalibus opaco-albis profusè strigatā.*

THE WELL-TRIMMED BULIMUS. Shell acuminately ovate, thin, scarcely umbilicated, whorls eight in number, convex, smooth, columella shortly reflected, aperture rather small, lip simple; transparent brown, profusely streaked with longitudinal opake white lines.

Hab. Chilon, Bolivia (under dead trunks of Cacti); Bridges.

Of transparent horny texture, neatly marked with longitudinal opake-white lines.

Species 561. (Mus. Benson.)

BULIMUS MAVORTIUS. *Bul. testā acuminato-ovatā, vix umbilicatā, anfractibus septem, convexo-declivibus, levibus, vel, sub lente, tenuistriatis, columellā breviter reflexā, labro simplici; pallidè stramineā, sparsim nigripunctatā, lineā purpurascēte ad suturas, anfractu ultimo zonulis duabus rosaceis cingulato, columellā intensè rosaceā, apice purpureo-nigricante.*

THE MARTIAL BULIMUS. Shell acuminately ovate, scarcely umbilicated, whorls seven in number, convexly slanting, smooth, or, beneath the lens, finely striated, columella shortly reflected, lip simple; pale straw-colour, sprinkled here and there with black dots, and with a purple line round the sutures, last whorl encircled with two narrow pinkish zones, columella deep pink, apex purple-black.

Hab. Ceylon?

An extremely characteristic species, of which I have been favoured with two specimens from the collection of Mr. Benson.

Species 562. (Mus. Cuming.)

BULIMUS IGNAVUS. *Bul. testā oblongo-ovatā, subprofundè umbilicatā, anfractibus septem, rotundatis, longitudinaliter subtilissimè striatis, columellā latā, subreflexā, labro simplici; sordidè corneā.*

THE SLUGGISH BULIMUS. Shell oblong-ovate, rather deeply umbilicated, whorls seven in number, rounded, longitudinally very finely striated, columella broad, slightly reflected, lip simple; dirty horn colour.

Hab. Central America.

A thin horny shell with the whorls somewhat rounded and rather deeply umbilicated.

Species 563. (Mus. Cuming.)

BULIMUS LIMENSIS. *Bul. testā acuminato-ovatā, subprofundè umbilicatā, anfractibus septem, longitudinaliter creberrimè elevato-striatis, striis irregularibus, subplicatis, columellā reflexā, labro simplici; pallidè ferrugineo-fuscā.*

August, 1849.

THE LIMA BULIMUS. Shell acuminate ovate, rather deeply umbilicated, whorls seven in number, longitudinally very closely elevately striated, striae irregular, subplicate, columella reflected, lip simple; pale rusty brown.

Hab. Lima and Quito, South America.

This is allied to the *B. scalariformis*, but does not agree with any of the varieties of that species.

Species 564. (Mus. Benson.)

BULIMUS SYLHETICUS. *Bul. subacuminato-oblonga, solidiuscula, sinistrali, umbilicata, anfractibus sex, laevibus, columella labroque subincrassatis, dilatato-reflexis; vividè lutea, columella labroque pallidioribus.*

THE SYLHET BULIMUS. Shell somewhat acuminate oblong, rather solid, sinistral, umbilicated, whorls six in number, smooth, lip and columella rather thickened, dilutely reflected; bright yellow, lip and columella paler.

Hab. Sylhet, Eastern Himalaya; Benson.

Having very much the aspect of a young or dwarf specimen of *B. citrinus*, it might easily be confounded with that species.

Species 565. (Mus. Cuming.)

BULIMUS MOLLICELLUS. *Bul. testâ subcylindraco-oblonga, vix umbilicata, suturis subconstrictis, anfractibus sex, subtilissimè irregulariter striatis, ad suturas leviter crenulatis, columella reflexa, appressa, aperturâ paululum contracta, labro simplici; pellucido-alba, epidermide tenui straminea induta.*

THE DELICATE BULIMUS. Shell somewhat cylindrically oblong, scarcely umbilicated, sutures rather constricted, whorls six in number, very finely irregularly

striated, slightly crenulated at the sutures, columella reflected, appressed, aperture a little contracted, lip simple; transparent white, covered with a thin straw coloured epidermis.

Hab. — ?

A delicate small species certainly distinct from any hitherto described.

Species 566. (Mus. Cuming.)

BULIMUS TRANSPARENS. *Bul. testâ acuminato-oblonga, tenuissima, haud umbilicata, anfractibus sex, subtilissimè irregulariter striatis, columella tenuissimè reflexa, labro simplici; pellucido-cornea.*

THE TRANSPARENT BULIMUS. Shell acuminate oblong, very thin, not umbilicated, whorls six in number, very finely irregularly striated, columella very thinly reflected, lip simple; transparent horny.

Hab. — ?

Of as light and delicate a structure as any *Lymnea*.

Species 567. (Mus. Cuming.)

BULIMUS NIGRILINEATUS. *Bul. testâ conico-ovata, ventricosâ, tenuicula, haud umbilicata, anfractibus sex, laevibus, vel, sub lente, tenuissimè striatis, columella tenuiter reflexa, labro simplici; straminea, lineis nigro-fuscis fasciata.*

THE BLACK-LINED BULIMUS. Shell conically ovate, ventricose, rather thin, not umbilicated, whorls six in number, smooth, or, beneath the lens, very finely striated, columella thinly reflected, lip simple; pale straw-colour, banded with black-brown lines.

Hab. — ?

The bands round the upper part of the whorls are somewhat lighter than those round the lower.



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577.

BULIMUS.

PLATE LXXVIII.

Species 568. (Mus. Cuming.)

BULIMUS LATIREFLEXUS. *Bul. testá acuminato-cylindraceá, subobesá, semipellucidá, compressè umbilicatá, anfractibus octo, obliquè creberrimè plicato-striatis, infra suturas lineá marginatis, columellá latá, verticali, aperturá suborbiculari, labro latè reflexo; fulvescente-corneá, labro opaco-albidá.*

THE BROADLY-REFLECTED BULIMUS. Shell acuminate cylindrical, rather stout, semitransparent, compressly umbilicated, whorls eight in number, obliquely very closely plicately striated, edged with a line beneath the sutures, columella broad, vertical, aperture nearly orbicular, lip broadly reflected; fulvous horny, lip opake fulvous-white.

Hab. Muscat?

Mr. Cuming has every reason to believe that this fine species is from Muscat, Arabia.

Species 569. (Mus. Benson.)

BULIMUS CERATINUS. *Bul. testá acuminato-oblongá, tenui, compressè umbilicatá, anfractibus sex ad septem, convexis, subobscure irregulariter sulcato-striatis, columellá latè verticaliter reflexá, aperturá parviusculá, suborbiculari, pellucido-corneá.*

THE INTRICATE BULIMUS. Shell acuminate oblong, thin, compressly umbilicated, whorls six to seven in number, convex, somewhat obscurely irregularly striated in a grooved manner, columella broadly vertically reflected, aperture rather small, nearly orbicular; transparent horny.

BENSON, MSS.

Hab. Almorah, Kemaon, Western Himalaya; Capt. Boys.

Distinguished from *B. montanus*, to which it is next allied, by its delicate transparent texture and absence of granules.

Species 570. (Mus. Benson.)

BULIMUS RUFISTRIGATUS. *Bul. testá cylindraceo-oblongá, compressè umbilicatá, anfractibus octo, plano-convexis, lævibus, ad suturas minutè crenulatis, aperturá parviusculá, suborbiculari; fulvo-corneá, opaco-albo irregulariter tenuistrigatá.*

THE RED-STREAKED BULIMUS. Shell cylindrically oblong, compressly umbilicated, whorls eight in number, flatly convex, smooth, minutely crenulated at the sutures, aperture rather small, nearly orbicular; fulvous horny, irregularly finely streaked with opake-white.

BENSON, MSS.

Hab. At the base of the lower range of the Himalaya, between the rivers Jumna and Sutlej; Hutton.

Communicated to Mr. Benson by Capt. Hutton with the title *Pupa strigata*, of which the specific name is occupied in the present genus.

Species 571. (Mus. Benson.)

BULIMUS BENSONI. *Bul. testá acuminato-ovatá, haud umbilicatá, anfractibus octo, transversim minutè et creberrimè striatis, striis subtilissimè granulatis, peculiariter corrugato-undulatis, columellá tenuiculá, leviter contortá, labro vix reflexo; violascente-albá, purpurascente-fusco variegatá, fasciis albis duabus tribusve, maculis intensè purpureis sagittalibus notatis, cingulatá, columellá castaneo-fuscá.*

BENSON'S BULIMUS. Shell acuminate ovate, not umbilicated, whorls eight in number, transversely minutely and very closely striated, striæ very finely granulated, peculiarly corrugately waved, columella rather thin, slightly twisted, lip scarcely reflected; violet-tinged white, variegated with purple-brown, encircled with two or three white bands marked with deep purple arrow-head spots, columella chesnut brown.

Hab. Banks of the river Amazon.

This fine species, which I have the honour to name after a gentleman who has afforded me much valuable information on the *Bulimi* of Bengal, Afghanistan and North Western India, is closely allied in general aspect to the *B. zebra*. Its chief point of difference consists in the minute waved-striated semigranular sculpture which characterises the entire surface of the shell, whilst the design of painting is marked by the presence of two white bands, painted with dark purple arrow-head spots, pointing towards the lip.

September, 1849.

Fig. 572.

As this species belongs more properly to *Achatina*, the reader is referred to Plate XXI. of that genus for description. For *Bulimus* Sp. 572, see Pl. LXXX.

Species 573. (Mus. Benson.)

BULIMUS EREMITA. *Bul. testā cylindraceo-oblongā, subprofundē umbilicatā, anfractibus octo, convexis, obscure subirregulariter striatis, aperturā obliquē productā, columellā latā, labro paululum expanso; cærulescente-albā.*

THE HERMIT BULIMUS. Shell cylindrically oblong, rather deeply umbilicated, whorls eight in number, convex, obscurely rather irregularly striated, aperture obliquely produced, columella broad, lip a little expanded; bluish-white.

BENSON, MSS.

Hab. Afghanistan; Hutton.

Collected by Capt. Hutton on his march with Shah Shuja's force from the Bolun Pass to Cabul, during the recent operations of the British Army in India.

Species 574. (Mus. Benson.)

BULIMUS RUSTICUS. *Bul. testā ovatā, solidiusculā, haud umbilicatā, spirā obtusā, anfractibus quinque ad sex, convexis, lævibus, columellā plano-incrassatā, subcallosā, quasi dentatā, aperturā obliquā, labro reflexo; castaneo-brunnēā, circa columellam obscure fasciatā, albidā versus apicem, columellā labroque albis.*

THE SIMPLE BULIMUS. Shell ovate, rather solid, not umbilicated, spire obtuse, whorls five to six in number, convex, smooth, columella flatly thickened, rather callous, as if toothed, aperture oblique, lip reflected; chestnut-brown, obscurely banded around the columella, white towards the apex, lip and columella white.

MOUSSON, Land and Suss. Moll. Java, p. 114. pl. 22 f. 1.

Hab. Eastern Java.

I am indebted to Mr. Benson for an authentic example of this species, received from M. Mousson. It is, however, impossible to describe it satisfactorily, owing to the shell having lost its epidermis, which, to judge by analogy, would afford important characters.

The author notices having a number of dead specimens in his possession, collected in Eastern Java, and remarks, that it is the only representative hitherto found in that island, of the richly clad group, comprising *B. pythogaster* and its congeners, inhabiting the Philippines.

Species 575. (Mus. Benson.)

BULIMUS BOYSIANUS. *Bul. testā cylindraceo-oblongā, sinistrali, vix umbilicatā, anfractibus octo, convexis, subrugoso-striatis, ad suturas subtilissimè plicatis, lineis spiralibus, sub lente minutè decussatis, columellā reflexā; corneo-fuscā, lineis undulatis opaco-albis variegatā.*

BOYS' BULIMUS. Shell cylindrically oblong, sinistral, scarcely umbilicated, whorls eight in number, convex, rather coarsely striated, very finely plicated at the sutures, minutely decussated beneath the lens with spiral lines; horny brown, variegated with waved opaque-white lines.

BENSON, MSS.

Hab. Kemaon, Western Himalaya; Boys.

Named by Mr. Benson in honour of Capt. Boys, to whom we are indebted for this and many interesting species collected in North Western India.

Species 576. (Mus. Benson.)

BULIMUS CHERSONESICUS. *Bul. testā acuminato-cylindraceā, sinistrali, compressè umbilicatā, anfractibus octo, convexis, subobscurè rugoso-striatis, columellā latā, verticali; cærulescente-albā, fulvescente hic illic pallidè tinctā, aperturæ fauce pallidè aurantiā.*

THE CRIMEA BULIMUS. Shell acuminate cylindrical, sinistral, compressly umbilicated, whorls eight in number, convex, somewhat obscurely coarsely striated, columella broad, vertical; bluish-white, faintly tinged here and there with light brown, interior of the aperture light orange.

SOWERBY, MSS. Jay, Catalogue, 1839, p. 55.

Hab. Crimea, Southern Russia.

This is one of the list of species unknown to Dr. Pfeiffer. The specimen here figured from the collection of Mr. Benson was received from Mr. Sowerby with the above name in 1834.

Species 577. (Mus. Cuming.)

BULIMUS CONULUS. *Bul. testā conico-ovatā, vix umbilicatā, anfractibus septem, rotundatis, obliquè subtilissimè striatis; pellucido-corneā.*

THE LITTLE CONE BULIMUS. Shell conically ovate, scarcely umbilicated, whorls seven in number, rounded, obliquely very finely striated; transparent horny.

Hab. Port Natal, South Africa.

Very thin and transparent, of a conical form rather broad at the base.

Bulimus, Pl. LXXIX.



BULIMUS.

PLATE LXXIX.

Species 578. (Mus. Cuming.)

BULIMUS POLYGYRATUS. *Bul. testā pyramidalitūritā, minutē umbilicatā, anfractibus novem ad decem, subangustis, rotundatis, subtiliter plicato-striatis, columellā reflexā, aperturā parvā, labro simplici; cærulescente-albā.*

THE MANY-WHORLED BULIMUS. Shell pyramidally turreted, minutely umbilicated, whorls nine to ten in number, rather narrow, rounded, finely plicately striated, columella reflected, aperture small, lip simple; bluish-white.

Hab. — ?

An erect closely convoluted shell, of which the sutures are rather impressed.

Species 579. (Mus. Cuming.)

BULIMUS MICRA. *Bul. testā acuminato-turritā, tenuissimā, vix umbilicatā, anfractibus acto, supernè tumidi-uscūlā, rotundatis, longitudinaliter elevato-striatis, quasi costellatis, columellā reflexā, aperturā parvā, labro tenui; pellucido-stramineā.*

THE SMALL BULIMUS. Shell acuminate turreted, very thin, scarcely umbilicated, whorls eight in number, rather swollen round the upper part, rounded, longitudinally elevately striated, as if finely ribbed, columella reflected, aperture small, lip thin; transparent straw-colour.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 262. pl. 41. f. 18 to 19.

Hab. Chilon, Bolivia (under trunks of Cacti); Bridges.

This little species seems to obtain rather a wide range. According to D'Orbigny it is found in the environs of Rio Janeiro as well as on the eastern side of the Bolivian Andes.

Species 580. (Mus. Cuming.)

BULIMUS CARACCASSENSIS. *Bul. testā acuminato-turritā, umbilicatā, anfractibus novem angustis, rotundatis, longitudinaliter elevato-striatis, infra suturas quasi costellatis, suturis impressis, columellā reflexā, aperturā parvā, labro tenui; sordidè fulvescente.*

THE CARACCAS BULIMUS. Shell acuminate turreted,

umbilicated, whorls nine in number, narrow, rounded, longitudinally elevately striated, beneath the sutures as if finely ribbed, sutures impressed, columella reflected, aperture small, lip thin; dull fulvous-colour.

Hab. Caraccas; Sallè.

Very like the first species of this plate, *B. polygyratus*, though smaller and differing in form.

Species 581. (Mus. Cuming.)

BULIMUS TUNETANUS. *Bul. testā oblongo-ovatā, hyalinā, sub-Partulaformi, compressè umbilicatā, anfractibus sex, tumidiusculis, obliquè subtilissimè striatis, columellā latā, expansā, aperturā ovatā, supernè callositate parvā, labro reflexo; hyalino-albā, labro opaco-albo.*

THE TUNIS BULIMUS. Shell oblong-ovate, hyaline, somewhat Partula-shaped, compressly umbilicated, whorls six in number, rather swollen, obliquely very finely striated, columella broad, expanded, aperture ovate, with a small callosity at the upper part, lip reflected; hyaline white, lip opake-white.

Hab. Tunis; Capt. Spratt.

A delicate transparent shell, though of comparatively solid growth, and with the lip reflected, reminding one of the *Partula hyalina*.

Species 582. (Mus. Cuming.)

BULIMUS CONTIGUUS. *Bul. testā elongato-cylindraceutā, haud umbilicatā, anfractibus novem, plani-convexis, lævibus, politis, ad suturas exiliter impresso-crenulatis, columellā latā, verticali, aperturā minutā, marginibus incrassatis, reflexis, supra callo junctis; eburneā.*

THE CLOSELY-CONVOLUTED BULIMUS. Shell elongately cylindrical, not umbilicated, whorls nine in number, flatly convex, smooth, polished, faintly impressly crenulated at the sutures, columella broad, vertical, aperture minute, margins thickened, reflected, joined above by a callosity; ivory-white.

Hab. Island of Socotra.

A very characteristic closely convoluted polished shell, with a peculiarly small aperture.

September, 1849.

Species 583. (Mus. Benson.)

BULIMUS OBTUSUS. *Bul. testā cylindraceo-oblongā, haud umbilicatā, apice peculiariter abbreviatā, anfractibus septem ad octo, subplano-convexis, obliquè striatis, columellā arcuatā, aperturā parvā, suborbiculari, labro tenuè reflexo; cærulescente-albā.*

THE OBTUSE BULIMUS. Shell cylindrically oblong, not umbilicated, peculiarly abbreviated at the apex, whorls seven to eight in number, rather flatly convex, obliquely striated, columella arched, aperture small, nearly orbicular, thinly reflected; bluish-white.

PFEIFFER, Symbolæ, vol. i. p. 84. and vol. ii. p. 119.

Pupa obtusa, Draparnaud.

Helix (Cochlostyla) obtusa, Férussac.

Pupa Germanica, Lamarck.

Hab. Australia. Austria

Chiefly distinguished by the peculiar sinking of the first few whorls.

Species 584. (Mus. Cuming.)

BULIMUS EUBOICUS. *Bul. testā acuminato-oblongā, chrysalidiformi, compressè umbilicatā, anfractibus novem, plano-convexis, minutissimè striatis, supernè marginatis, aperturā parvā, fortiter tridentatā, supra callositate, labro subreflexo; fulvescente-corneā, dentibus labroque opaco-albis.*

THE EUBOÆAN BULIMUS. Shell acuminate oblong, chrysalis-shaped, compressly umbilicated, whorls nine in number, flatly convex, very minutely striated, edged round the upper part, aperture small, strongly three-toothed, with a callosity above, lip slightly reflected; fulvous horny, teeth and lip opaque-white.

Hab. Eubœa; Capt. Spratt.

Unusually strongly toothed for so small a species.

Species 585. (Mus. Cuming.)

BULIMUS NANUS. *Bul. testā subelongatā, umbilicatā, anfractibus octo, convexis, subtilissimè striatis, striis infra suturas subplicatis, columellā verticali, aperturā parvā, labro simplici; cinerascete, strigis fusciscentibus hic illic obscure notatā, apice fusco.*

THE DWARF BULIMUS. Shell rather elongated, umbilicated, whorls eight in number, convex, very finely striated, striæ slightly plicated beneath the sutures, columella vertical, aperture small, lip simple; pale ash-colour, obscurely marked here and there with light brown streaks, apex brown.

Hab. Chili.

A small turreted shell very faintly marked with brownish streaks and with a dark-brown apex.

Species 586. (Mus. Cuming.)

BULIMUS MACILENTUS. *Bul. testā acuminatā, basi sub-oblongā, haud umbilicatā, tenuissimā, anfractibus sex, lævibus, politis, vel sub lente subtilissimè concentricè striatis, supernè minutè marginatis, columellā vix reflexā, aperturā oblongo-ovatā, labro tenui; virescente, vitreā.*

THE LEAN BULIMUS. Shell acuminate, rather oblong at the base, not umbilicated, very thin, whorls six in number, smooth, polished, or, beneath the lens, very finely concentrically striated, minutely edged round the upper part, columella only slightly reflected, aperture oblong-ovate, lip thin; greenish, glassy.

Hab. Philippine Islands; Cuming.

A very transparent, greenish, glassy shell, of which the last whorl is rather oblong-inflated.

Species 587. (Mus. Benson.)

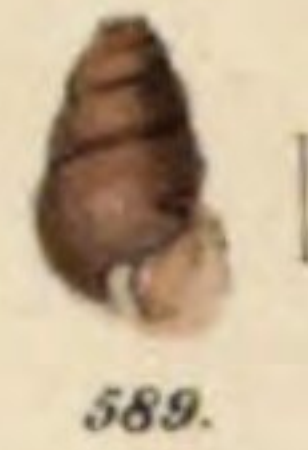
BULIMUS SEGREGATUS. *Bul. testā ovato-conicā, subpyramidali, basi tumidiusculā, umbilicatā, anfractibus septem, convexis, obliquè striatis, columellā latā, verticali, aperturā parvā, rotundatā, labro tenui; sordidè corneā.*

THE ALIEN BULIMUS. Shell ovately conical, somewhat pyramidal, rather swollen at the base, umbilicated, whorls seven in number, convex, obliquely striated, columella broad, vertical, aperture small, rounded, lip thin; dull horny.

BENSON, MSS.

Hab. Simla, Western Himalaya.

Distinguished from most of the Himalayan species by its conical form.



BULIMUS.

PLATE LXXX.

Species 572. (Mus. Benson.)

BULIMUS LATEBRICOLA. *Bul. testā acuminato-oblongā, compressè umbilicatā, anfractibus sex, subrotundatis, lævibus, vel concentricè striatis; pellucido-stramineā, politā.*

THE LURCHER BULIMUS. Shell acuminately oblong, compressly umbilicated, whorls six in number, somewhat rounded, smooth, or concentrically striated; transparent straw-colour, polished.

BENSON, MS.

Hab. Landour, Western Himalaya.

A very delicately coloured transparent species, obtained by Mr. Benson in the lower Himalaya range, at elevations varying from 4,000 to 7,000 feet.

Species 588. (Mus. Pfeiffer.)

BULIMUS NITIDULUS. *Bul. testā subacuminato-oblongā, solidiusculā, compressè umbilicatā, anfractibus quinque ad sex, rotundatis, striatulis, politis, suturis constrictis, columellā latiusculā, expansā; cinnamomeo-corneā.*

THE SHINING BULIMUS. Shell somewhat acuminately oblong, rather solid, compressly umbilicated, whorls five to six in number, rounded, finely striated, polished, sutures constricted, columella rather wide, expanded; cinnamon horn-colour.

PFEIFFER, Wiegman's Archives, 1839, vol. i. p. 352.

Hab. Matanzas, Island of Cuba.

A small shining cinnamon-brown shell.

Species 589. (Mus. Pfeiffer.)

BULIMUS ANTONI. *Bul. testā ovato-conicā, compressè umbilicatā, anfractibus quinque ad sex, convexiusculis, lævibus, columellā subreflexā; pellucido-corneā.*

ANTON'S BULIMUS. Shell ovately conical, compressly umbilicated, whorls five to six in number, rather convex, smooth, columella slightly reflected; transparent horny.

PFEIFFER, Symbolæ, vol. i. p. 24.

Strobilus oblongus, Anton.

Hab. Island of Opara.

An extremely small species, of a dull transparent horny substance.

Species 590. (Mus. Cuming.)

BULIMUS SCALARIOIDES. *Bul. testā subulatā, vix umbilicatā, anfractibus undecim, rotundatis, undique creberrimè plicato-costatis, costis peculiariter acutè compressis, aperturā parvā, rotundatā, labro simplici; sordidè albā.*

THE SCALARIA-LIKE BULIMUS. Shell subulate, scarcely umbilicated, whorls eleven in number, rounded, very closely plicately ribbed throughout, the ribs being peculiarly sharply compressed, aperture small, rounded, lip simple; dull white.

Hab. Canary Islands?

Distinguished by the very sharply compressed structure of the ribs, which range longitudinally as in *Scalaria*.

Species 591. (Mus. Cuming.)

BULIMUS GLOMERATUS. *Bul. testā conico-subulatā, haud umbilicatā, anfractibus novem, rotundatis, lævibus, suturis subconstrictis, aperturā suborbiculari, labro simplici; pellucido-corneā.*

THE COILED BULIMUS. Shell conically subulate, not umbilicated, whorls nine in number, rounded, smooth, sutures rather constricted, aperture nearly orbicular, lip simple; transparent horny.

Hab. — ?

Of a peculiar conical subulate form, of many whorls.

Species 592. (Mus. Benson.)

BULIMUS DECORTICATUS. *Bul. testā subulatā, solidiusculā, vix umbilicatā, anfractibus octo, concentricè subrudè plicato-striatis, columellā tenui, reflexā, aperturā parviusculā, oblongo-ovatā, labro tenui; sordidè virescente-corneā.*

THE DECORTICATED BULIMUS. Shell subulate, rather solid, scarcely umbilicated, whorls eight in number, concentrically rather rudely plicately striated, columella thin, reflected, aperture rather small, oblong-ovate, lip thin; dull greenish horn.

Hab. Macao, China; Dr. Cantor.

A shell of rather solid growth, longitudinally sculptured throughout with rude plicate striæ.

December, 1849.

Fig. 593.

The shell here figured, inadvertently, is the *B. Pupoides*, already published at Pl. XXXVIII. Sp. 231.

For Sp. 593, see Pl. LXXXIV.

Species 594. (Mus. Pfeiffer.)

BULIMUS GRACILLIMUS. *Bul. testā subulatā, gracili, haud umbilicatā, anfractibus septem ad octo, planulatis, medio leviter coarctatis, longitudinaliter acutè costatis et striatis, suturis impressis, columellā subincrassatā, aperturā parvā, labro simplici; sordidè albā.*

THE VERY SLENDER BULIMUS. Shell subulate, slender, not umbilicated, whorls seven to eight in number, rather flattened, slightly contracted in the middle, longitudinally sharply ribbed and striated, sutures impressed, columella a little thickened, aperture small, lip simple; dead white.

PFEIFFER, *Symbolæ*, vol. iii. p. 64.

Bulimus striato-costatus, D'Orbigny.

Hab. Cuba.

Originally described by Dr. Pfeiffer in Wiegman's Archives as an *Achatina*.

Species 595. (Mus. Benson.)

BULIMUS CLAVULINUS. *Bul. testā acuminato-oblongā, vix umbilicatā, basin versus subventricosā, anfractibus sex,*

convexis, lævibus, columellā tenuè reflexā, aperturā ovatā, labro tenui; pellucido-stramineā, vitreā.

THE LITTLE NAIL-LIKE BULIMUS. Shell acuminate, oblong, scarcely umbilicated, rather ventricose towards the base, whorls six in number, convex, smooth, columella thinly reflected, aperture ovate, lip thin; transparent straw-colour, glassy.

POTIEZ and MICHAUD, *Gal. de Douai*, p. 136. pl. 14. f. 9, 10.

Hab. Moka, Isle of France (on woody banks); Benson.

If this shell is Potiez and Michaud's *B. clavulinus*, which I believe it is, Dr. Pfeiffer is wrong in quoting it as synonymous with *B. Goodalli*.

Species 596. (Mus. Pfeiffer.)

BULIMUS HARPA. *Bul. testā ovato-conicā, tenui, subventricosā, vix umbilicatā, anfractibus quatuor, rotundatis, concentricè nitidè costellato-striatis, aperturā rotundā, labro simplici; pellucido-brunneā.*

THE HARP BULIMUS. Shell ovately conical, thin, rather ventricose, slightly umbilicated, whorls four in number, rounded, concentrically neatly sculptured with rib-like striæ, aperture rounded, lip simple; transparent brown.

PFEIFFER, *Zeitschr. für Malac.*, 1847, p. 147.

Hab. — ?

A minute but extremely interesting species, partaking somewhat of the typical form of *Cyclostoma*.



597.



598.



599.



600.



601. a.



601. b.



602.



601. c.



603.



604.

BULIMUS.

PLATE LXXXI.

Species 597. (Mus. Taylor.)

BULIMUS BIVITTATUS. *Bul. testá pyramidalí-ovatá, basin versus obliquá, umbilicatá, anfractibus octo, lævibus, ad suturas peculiariter crenulatis, aperturá obliquè ovatá, columellá labroque latè reflexis et effusis; albá, anfractu ultimo castaneo pallidè bifasciato.*

THE TWO-FILLETED BULIMUS. Shell pyramidally ovate, oblique towards the base, umbilicated, whorls eight in number, smooth, peculiarly crenulated at the sutures, aperture obliquely ovate, lip and columella broadly reflected and effused; white, last whorl faintly two-banded with chestnut.

SOWERBY, Conchological Illustrations, f. 46.

Hab. Brazil.

Effused in an oblique direction at the base, after the manner of the *B. auris-leporis*.

Species 598. (Mus. Taylor.)

BULIMUS MULIEBRIS. *Bul. testá acuminato-oblongá, umbilicatá, tenuiculá, anfractibus septem, subrudè subtilissimè striatis, columellá reflexá, aperturá ovatá, labro simplici; albidá, strigis angustis fuscis, hic illic saturatoribus, undique longitudinaliter pictá.*

THE EFFEMINATE BULIMUS. Shell acuminate oblong, umbilicated, rather thin, whorls seven in number, somewhat rudely very finely striated, columella reflected, aperture ovate, lip simple; whitish, longitudinally painted throughout with narrow brown streaks which are here and there darker.

Hab. New Granada.

A light delicately painted species, finely rudely striated.

Species 599. (Mus. Cuming.)

BULIMUS BOLIVIANUS. *Bul. testá acuminato-oblongá, compressè umbilicatá, anfractibus septem, lævibus aut minutissimè decussatim impresso-striatis, columellá contorto-plicatá, latissimè depresso-dilatátá, aperturá ovatá, labro simplici; carneo-albidá, purpureo-fusco fasciatá, fasciis latis, confertis, hic illic interruptis, columellá rubellá, apice rubro.*

THE BOLIVIAN BULIMUS. Shell acuminate oblong, compressly umbilicated, whorls seven in number, smooth or very minutely decussated with impressed

striae, columella plicately twisted, very broadly depressly dilated, aperture ovate, lip simple; flesh-white, banded with purple-brown, bands broad, close-set, here and there interrupted, columella reddish, apex red.

PFEIFFER, Pro. Zool. Soc., 1846, p. 34.

Hab. Near Merida, Andes of Bolivia.

The shell here represented is the original type of the species described by Dr. Pfeiffer. To that which I have mistaken for it at Pl. XLIV. Sp. 281, the name *B. annulatus* may be given. The species are truly distinct, as may readily be seen by an accurate comparison of the figures.

Species 600. (Mus. Taylor.)

BULIMUS PATRICIUS. *Bul. testá pyramidalí-oblongá, subampliter compressè umbilicatá, anfractibus octo, obliquè subrudè striatis, aperturá parviusculá, ovatá, columellá labroque latè reflexis; albidá, rufescente-purpureo subobscurè interruptè fasciatá, aperturæ fauce roseo-purpureá.*

THE PATRICIAN BULIMUS. Shell pyramidally oblong, rather largely compressly umbilicated, whorls obliquely somewhat rudely striated, aperture rather small, ovate, lip and columella broadly reflected; whitish, rather obscurely interruptedly banded with reddish purple, interior of the aperture rose-purple.

Hab. — ?

This fine species is probably from New Granada, but I have no authority for stating it to be the locality.

Species 601. (Fig. a, b, c, Mus. Taylor.)

BULIMUS SPECTATUS. *Bul. testá fusiformi-ovatá, vix umbilicatá, tenuiculá, anfractibus sex ad septem, longitudinaliter subrudè tenuistriatis, columellá reflexá, depressiusculá, aperturá ovatá, labro peculiariter effuso; albidá vel cinereo-fuscescente variè strigatá aut fasciatá, columellá et aperturæ fauce roseo-purpureis.*

THE CHOICE BULIMUS. Shell fusiformly ovate, scarcely umbilicated, rather thin, whorls six to seven in number, longitudinally somewhat rudely finely striated, columella reflected, rather depressed, aperture ovate, lip peculiarly effused; whitish or ash-brown, vari-

ously streaked or banded, columella and interior of the aperture rose-purple.

Hab. New Granada.

Except in the rose-purple hue of the columella and aperture, the pattern of colouring is too variable in this beautiful species to particularize. Its graceful effused growth is characteristic.

Species 602. (Mus. Taylor.)

BULIMUS TAYLORIANUS. *Bul. testā ventricoso-oblongā, tenui, inflatā, haud umbilicatā, anfractibus quinque, longitudinaliter obscure plicato-striatis, ad suturas leviter crenulatis, sub lente undique minutissimè granulatis, anfractu ultimo valdè maximo, peculiariter descendente, columellā tenuissimā, reflexā, labro vix reflexo; castaneo-fuscā, semipellucidā, lineis perpaucis nigris apicem versus fulguratā, columellā labroque roseo tinctis.*

TAYLOR'S BULIMUS. Shell ventricosely oblong, thin, inflated, not umbilicated, whorls five in number, longitudinally obscurely plicately striated, slightly crenulated at the sutures, very minutely granulated throughout beneath the lens, last whorl very much the largest, peculiarly descending, columella very thin, reflected, lip scarcely reflected; chestnut-brown, semipellucid, lightning-marked towards the apex with a few black lines, lip and columella tinged with rose.

Hab. Environs of Quito.

A delicate inflated species of a dark transparent brown colour, marked with dark zigzag lines near the apex, and having the thin lip and columellar edge tinged with rose.

Being indebted to Thomas Lombe Taylor, Esq., for the species, I have the pleasure to name it in honour of that distinguished collector.

Species 603. (Mus. Cuming.)

BULIMUS SINISTRALIS. *Bul. testā subacuminato-oblongā, crassiusculā, sinistrali, vix umbilicatā, anfrac-*

tibus septem, subrotundatis, oblique striatis, columellā reflexā, aperturā parviusculā, labro reflexo; luteā, olivaceo-viridi marmoratā, aperturæ fauce intensè fuscā, labro albo.

THE SINISTRAL BULIMUS. Shell somewhat acuminate oblong, rather thick, sinistral, scarcely umbilicated, whorls seven in number, somewhat rounded, obliquely striated, columella reflected, aperture rather small, lip reflected; yellow, marbled with olive-green, interior of the aperture very dark brown, lip white.

Hab. Java.

Care should be taken not to confound this species with the green variety of *B. lævus*, elevated to the rank of a species by Mousson, under the name *B. furcillatus*, from which it is certainly distinct.

Species 604. (Mus. Taylor.)

BULIMUS ALBIZONATUS. *Bul. testā subpyramidaliconicā, basi depressiusculā, vix umbilicatā, anfractibus septem, plano-convexis, oblique tenuistriatis, suturis peculiariter lineari-incisis, anfractu ultimo basi angulato, columellā latè reflexā, aperturā parviusculā, labro reflexo; intus extusque cærulescente-albā, zonulā angustā opaco-albā ad angulum anfractūs ultimi.*

THE WHITE-ZONED BULIMUS. Shell somewhat pyramidal conical, rather depressed at the base, scarcely umbilicated, whorls seven in number, flatly convex, obliquely finely striated, sutures peculiarly linearly engraved, last whorl angled at the base, columella broadly reflected; bluish white within and without, having a narrow opaque white zone at the angle of the last whorl.

Hab. Ceylon.

A pale blue-white shell, remarkably characterized by a narrow opaque-white zone round the middle of the whorls, exactly in the place of the suture, concealed in all but the last whorl by the superposition of one whorl upon the other.



606 a.



605.



606 b.



607.



608 a.



609.



608 b.

BULIMUS.

PLATE LXXXII.

Species 605. (Mus. Taylor.)

BULIMUS TURBINATUS. *Bul. testā cylindraceo-oblongā, vix umbilicatā, anfractibus septem, subrotundatis, longitudinaliter obscure impresso-striatis, ad suturas subtiliter crenulatis et marginatis, columellā contortā, basi recedente, aperturā parviusculā, labro simplici; lutescente, castaneo maculatā et strigatā, columellā livido-purpurascēte.*

THE TURBINATED BULIMUS. Shell cylindrically oblong, scarcely umbilicated, whorls seven in number, somewhat rounded, longitudinally obscurely impressly striated, finely crenulated and margined at the sutures, columella twisted, receding at the base, aperture rather small, lip simple; yellowish, spotted and streaked with chestnut, columella livid-purple.

Achatina turbinata, Lea, Trans. Am. Phil. Soc., vol. ii. p. 31.
Hab. West Coast of Africa

I find this shell with the above name attached to it, but am not at all sure that it is the species. It is certainly distinct from the allied African forms.

Species 606. (Mus. Cuming.)

BULIMUS BIFULGURATUS. *Bul. testā ventricosio-ovatā, tenuiculā, anfractibus sex, obliquè plicato-striatis, striis regularibus, labrum versus evanidis, columellā tenui, subcontortā, aperturā ovatā, labro simplici; fuscescente, intensè cæruleo-viridi tinctā, lineis flavidis, binis, acutè undatis, undique fulguratā.*

THE DOUBLE-WAVED BULIMUS. Shell ventricosely ovate, rather thin, obliquely plicately striated, striæ regular, fading towards the lip, columella thin, slightly twisted, aperture ovate, lip simple; light brown, stained with deep blue-green, lightning-marked throughout with yellow zigzag lines in pairs.

Hab. Andes of Columbia.

An interesting new species allied to *B. zebra*, but very distinctly characterized in its varieties of painting.

Species 607. (Mus. Cuming.)

BULIMUS PROXIMUS. *Bul. testā globoso-ovatā, ventricosissimā, haud umbilicatā, anfractibus sex, undique minutissimè granulosis, apicem versus obscure radiatim costulatis, columellā subcontortā, basi recedente, labro subincrassato, reflexo; fuscā, infra suturas pallidè fasciatā, epidermide olivaceo-corneo indutā, columellā labroque albis.*

THE ALLIED BULIMUS. Shell globosely ovate, very ventricose, not umbilicated, whorls six in number, very minutely granulated throughout, obscurely radiately finely ribbed towards the apex, columella slightly twisted, receding at the base, lip rather thickened, reflected; brown, with a pale band beneath the sutures, covered with an olive horny epidermis, lip and columella white.

SOWERBY, Conch. Illustrations, f. 102.

Hab. Brazil.

Constantly distinguished by its broad rudely swollen form, and light band beneath the sutures.

Species 608. (Mus. Cuming.)

BULIMUS ADOPTUS. *Bul. testā subelongato-oblongā, crassiusculā, haud umbilicatā, anfractibus quinque ad sex, longitudinaliter subrudè striatis, ad suturas subtiliter plicato-crenulatis, columellā incrassatā, peculiariter latè depressā, aperturā ovatā, labro crassatim reflexo; olivaceo-fuscā, apicem versus pallidè flammātā.*

THE ADOPTED BULIMUS. Shell somewhat elongately oblong, rather thick, not umbilicated, whorls five to six in number, longitudinally somewhat rudely striated, finely plicately crenulated at the sutures, columella thickened, peculiarly broadly depressed, aperture ovate, lip thickly reflected; olive-brown, palely flamed towards the apex.

Hab. Banks of the Orinoco.

Allied in form to *B. Funckii*, from which it may be recognised by its colouring and pattern of light flames.

Species 609. (Mus. Cuming.)

BULIMUS CALIGINOSUS. *Bul. testā oblongo-ovatā, haud umbilicatā, anfractibus sex, obliquè rudè striatis, columellā latè reflexā, appressā, aperturā ovatā, labro simplici; cinereā vel albicante, ferrugineo-fusco irregulariter strigato-tinctā.*

THE DARKENED BULIMUS. Shell oblong-ovate, not umbilicated, whorls six in number, obliquely rudely striated, columella broadly reflected, appressed, aperture ovate, lip simple; ash-colour or whitish, irregularly stained in a streaked manner with rusty brown.

Hab. — ?

There is little of character to distinguish this species, although it is not referable to any hitherto described.

December, 1849.



610.



611.



612.



613



614



615.



616.



617.



618.



619.

BULIMUS.

PLATE LXXXIII.

Species 610. (Mus. Hamilton.)

BULIMUS HAMILTONI. *Bul. testā acuminato-turritā, umbilicatā, spiræ suturis profundè impressis, anfractibus septem ad octo, subrotundatis, rudè plicato-striatis, aperturā parvā, columellā labroque simplicibus; sordidè albā, apice rubro.*

HAMILTON'S BULIMUS. Shell acuminately turreted, umbilicated, sutures of the spire deeply impressed, whorls seven to eight in number, somewhat rounded, rudely plicately striated, aperture small, lip and columella simple; dead white, apex red.

Hab. Near the Lake of Titicaca, Bolivia.

This interesting little species was collected by Mr. Pentland on the mountains in the environs of the Lake of Titicaca, which is 14,000 feet above the level of the sea. It may be distinguished by its characteristic red apex.

Species 611. (Mus. Hamilton.)

BULIMUS GIBBER. *Bul. testā oblongo-turritā, sinistrali, compressè umbilicatā, anfractibus septem ad octo, convexiusculis, rugoso-striatis, ad suturas subtiliter marginatis, columellā dilatatā, aperturā parvā, labro paululum reflexo; lacteā.*

THE GIBBOUS BULIMUS. Shell oblong-turreted, sinistral, compressly umbilicated, whorls seven to eight in number, slightly convex, roughly striated, finely margined at the sutures, columella dilated, aperture small, lip a little reflected; cream-colour.

KRYNICKI, Bull. Moscow, vol. vi. p. 416. pl. 3. f. 6.

Bulimus revolutus, Ziegler.

Hab. European Tartary.

The first three species of this plate are somewhat enlarged.

Species 612. (Mus. Belcher.)

BULIMUS GREGARIUS. *Bul. testā cylindraneo-turritā, compressè umbilicatā, anfractibus octo, obliquè impresso-striatis, suturis impressis, columellā verticaliter dilatā, aperturā parvā, subquadrato-ovatā, labro subreflexo; pellucido-corneā.*

THE ORDINARY BULIMUS. Shell cylindrically turreted, compressly umbilicated, whorls eight in number, ob-

liquely impressly striated, sutures impressed, columella vertically dilated, aperture small, somewhat squarely ovate, lip a little reflected; transparent horny.

ADAMS and REEVE, Moll. Voy. Samarang, pl. xiii. f. 12.

Hab. Sarawak, Borneo.

The oblique striæ are extremely superficial, and the shell is of a very thin horny substance.

Fig. 613. (Mus. Hamilton.)

This interesting shell, with a delicate purple-coloured aperture, proves to be a variety of *B. strigatus*, Sp. 280.

For Sp. 613, see Pl. LXXXV.

Species 614. (Mus. Hamilton.)

BULIMUS PENTLANDI. *Bul. testā acuminato-ovatā, basi subinflatā, vix umbilicatā, anfractibus sex, irregulariter rudè striatis, columellā reflexā, aperturā orbiculari-ovatā, labro simplici; sordidè olivaceā, epidermide indutā.*

PENTLAND'S BULIMUS. Shell acuminately ovate, rather inflated at the base, scarcely umbilicated, whorls six in number, irregularly rudely striated, columella reflected, aperture orbicularly ovate, lip simple; dull olive, covered with an epidermis.

Hab. Near the Lake of Titicaca, Bolivia.

This and the *B. rubricatus* were the only species found by Mr. Pentland on the mountains in the vicinity of the Lake of Titicaca, at the same lofty elevation.

Species 615. (Mus. Taylor.)

BULIMUS FUCATUS. *Bul. testā acuminato-ovatā, basi subobliquè effusā, vix umbilicatā, anfractibus sex, obscure striatis, ad suturas subcrenulatis, columellā reflexā, aperturā ovatā, labro effuso, vix reflexo; fuscescente, cæruleo-nigricante, subobscurè strigato-tinctā, columellā labroque pallidè roseis.*

THE DYED BULIMUS. Shell acuminately ovate, rather obliquely effused at the base, scarcely umbilicated, whorls six in number, obscurely striated, slightly crenulated at the sutures, columella reflected, aperture ovate, lip effused, scarcely reflected; light brown,

somewhat obscurely stained with streaks of blue-black, lip and columella pale rose.

Hab. Sebundoi, New Granada.

Distinguished by its elegantly effused growth. The dark painting is somewhat obscure and has a mottled appearance.

Species 616. (Mus. Cuming.)

BULIMUS LÆTUS. *Bul. testā acuminato-oblongā, vix umbilicatā, anfractibus sex, lævibus vel tenuistriatis, columellā reflexā, appressā, aperturā ovatā, labro vix reflexā; castaneo-spadiceā, zonulis duabus angustis luteo-albis cingulatā, columellā labroque roseis.*

THE CHEERFUL BULIMUS. Shell acuminate oblong, scarcely umbilicated, whorls six in number, smooth or finely striated, columella reflected, appressed, aperture ovate, lip scarcely reflected; chestnut-fawn colour, encircled by two narrow yellowish-white zones, lip and columella rose-pink.

Hab. Sebundoi, New Granada.

From the same locality as the preceding species, and very closely allied; it differs, however, in form. Mr. Taylor has a specimen collected independently of this, of exactly similar pattern and colour.

Species 617. (Mus. Cuming.)

BULIMUS OCCULTUS. *Bul. testā cylindraneo-fusiformi, basi angustè compressā, subumbilicatā, anfractibus novem, plano-convexis, ad suturas superficialiter canaliculatis, aperturā quadrato-oblongā, tridentatā, labro tenui, effuso; pellucido-albā, ad umbilicum atque pone labrum nigricante-castaneo tinctā.*

THE CONCEALED BULIMUS. Shell cylindrically fusiform, narrowly compressed at the base, slightly umbilicated, whorls nine in number, flatly convex, superficially channelled at the sutures, aperture squarely oblong, three-toothed, lip thin, effused; transparent white, stained with dark chestnut at the umbilicus, and behind the lip.

Hab. Brazil.

Allied in form and general aspect to *B. Bahiensis*, but differing materially in the character of the aperture.

Species 618. (Mus. Taylor.)

BULIMUS QUINQUEDENTATUS. *Bul. testā cylindraceā, crassiusculā, basi compressè umbilicatā, anfractibus octo, plano-convexis, obliquè tenuistriatis, aperturā parvā, coarctatā, quinque-vel sex-dentatā, labro plano-incrassato; corneo-olivaceā, dentibus labroque albis.*

THE FIVE-TOOTHED BULIMUS. Shell cylindrical, rather thick, base compressly umbilicated, whorls eight in number, flatly convex, obliquely finely striated, aperture small, contracted, five- or six-toothed, lip flatly thickened; horny olive, teeth and lip white.

PFEIFFER, Symbolæ, vol. i. p. 84.

Pupa quinquedentata, Mühlfeldt.

Hab. Dalmatia.

A shell of rather solid cylindrical growth, with the aperture much contracted.

Species 619. (Mus. Benson.)

BULIMUS PRETIOSUS. *Bul. testā cylindraneo-ovatā, compressè umbilicatā, anfractibus lævibus aut tenuistriatis, columellā latè verticaliter dilatā, aperturā parviusculā, suborbiculari, labro tenuè reflexā; pallidè corneā, pellucidā, strigis opaco-albis numerosis undatā.*

THE PRECIOUS BULIMUS. Shell cylindrically ovate, compressly umbilicated, whorls smooth or finely striated, columella broadly vertically dilated, aperture rather small, nearly orbicular, lip thinly reflected; pale horny, transparent, waved with numerous opaque-white streaks.

CANTOR, MS.

Hab. Field of Chillianwalla, India (found on *Mimosa* bushes on the banks of the Jhelum); *Cantor*.

An extremely delicate and interesting species, allied to *B. rufistrigatus*, from which it differs slightly in form, but most distinctly in pattern. Mr. Benson, to whom it was communicated by Dr. Cantor, informs me that it was collected during the late campaign of the British army in the Punjab, on the plain of Chillianwalla, the locality of Lord Gough's dearly purchased victory.



593.



620.



621.



622.



119.



120.



121.



623.



624.



625.

Sowerby, del et lith.

Reeve Benham & Reeve imp.

[All exceedingly minute]

BULIMUS.

PLATE LXXXIV.

Species 593. (Mus. Adams.)

BULIMUS OCTONOIDES. *Bul. testā subelongatā, spiræ suturis impressis, anfractibus septem, supernè rotundatis et concentricè impresso-striatis, columellā tenuè reflexā, aperturā parvā, labro simplici; pallidè stramineā, diaphanā.*

THE OCTONOID BULIMUS. Shell somewhat elongated, sutures of the spire impressed, whorls seven in number, rounded at the upper part and concentrically impressly striated, columella thinly reflected, aperture small, lip simple; light straw-colour, diaphanous.

ADAMS, Pro. Nat. Hist. Soc. Boston, 1845, p. 12.

Hab. Jamaica.

Named to denote its general resemblance with the *B. octonus*, which is referred to *Achatina*.

I am indebted for eight of the species of this plate to the kindness of Mr. C. B. Adams, Professor of Zoology, &c., in Amherst College, Massachusetts. They were collected during an excursion in Jamaica, in company with the Honourable Mr. Chitty, Chairman of Quarter Sessions in that Island, together with a number of interesting land shells of other genera, which Mr. Adams is preparing for publication in a periodical pamphlet form, under the title of 'Contributions to Conchology.'

Species 620. (Mus. Adams.)

BULIMUS TEREbella. *Bul. testā subulatā, anfractibus octo, convexiusculis, concentricè impresso-striatis, columellā tenuè reflexā, aperturā parvā, labro simplici; sordidè fuscescente.*

THE LITTLE AUGUR BULIMUS. Shell subulate, whorls eight in number, rather convex, concentrically impressly striated, columella thinly reflected, aperture small, lip simple; dull brownish.

ADAMS, MS.

Hab. Jamaica.

This is the most elongated form of the Jamaica type, of light diaphanous growth, concentrically impressly striated. It is very minute, and, with the rest of the species of this plate, considerably magnified.

Species 621. (Mus. Cuming.)

BULIMUS GOODALLII. *Bul. testā conico-elongatā, vix umbilicatā, anfractibus septem, convexiusculis, lævibus,*

columellā subcontortā, tenuè reflexā, aperturā parvā, labro simplici; pellucido-corneā.

GOODALL'S BULIMUS. Shell conically elongated, scarcely umbilicated, whorls seven in number, slightly convex, smooth, columella somewhat twisted, thinly reflected, aperture small, lip simple; transparent horny.

Helix Goodallii, Miller, Ann. Phil. 1822, p. 381.

Bulimus Goodallii, Gray.

Helix (Cochlicella) clavulus, Férussac.

Bulimus clavulinus, Potiez and Michaud.

Bulimus pumilus, Pfeiffer.

Hab. West Indies.

This little species, being transported from Jamaica, has become partially naturalized in this country, and is included by some authors in the British fauna. It is found abundantly in the pine-pits at Bristol, especially on the sides of the pots, where they are immersed in the decayed bark.

Species 622. (Mus. Adams.)

BULIMUS MIRABILIS. *Bul. testā pyramidal-conicā, anfractibus octo, rotundatis, supernè squamis grandibus erectis undique peculiariter coronatis, columellā contortā, aperturā parvā, medio contractā; carneo-fuscescente.*

THE WONDERFUL BULIMUS. Shell pyramidally conical, whorls eight in number, rounded, peculiarly coronated throughout with large erect scales, columella twisted, aperture small, contracted in the middle; light flesh-brown.

ADAMS, MS.

Hab. Jamaica.

The whorls in this remarkable species are contracted in the middle, and the upper portion is prominently coronated throughout with broad vaulted scales.

The three following *Bulimi* of Adams are numbered to belong to *Achatina*, under which genus the descriptions are given at Pl. XXII.

Species 623. (Mus. Adams.)

BULIMUS MINIMUS. *Bul. testā subulatā, spiræ suturis subimpressis, anfractibus septem, subrotundatis, con-*

centricè impresso-striatis, columellâ tenuè reflexâ, aperturâ parviusculâ, labro simplici; pallidè stramineâ.

THE VERY SMALL BULIMUS. Shell subulate, sutures of the spire somewhat impressed, whorls seven in number, somewhat rounded, concentrically impressly striated, columella thinly reflected, aperture rather small, lip simple; light straw-colour.

ADAMS, MS.

Hab. Jamaica.

It may be as well to repeat that all the species of this plate are very considerably magnified. The *B. minimus* under consideration, the smallest of the genus at present known, is not half the size of a grain of corn.

Species 624. (Mus. Adams.)

BULIMUS PAUPERULUS. *Bul. testâ acuminato-oblongâ, anfractibus quinque, lævibus, supernè vix impresso-striatis, columellâ tenuè reflexâ, aperturâ ovatâ, labro simplici; sordidè stramineâ.*

THE MEAN-LOOKING BULIMUS. Shell acuminate oblong, whorls five in number, smooth, slightly impressly striated round the upper part, columella thinly reflected, aperture ovate, lip simple; dull straw-colour.

ADAMS, MS.

Hab. Jamaica.

It may be observed that there is a great similarity in the majority of these small *Bulimi* and *Achatinæ* from Jamaica. Though specifically distinct, they are but slight modifications of one typical character,—a diaphanous shell of more or less elongated convolution, with the whorls concentrically impressly striated.

Species 625. (Mus. Benson.)

BULIMUS TUTULUS. *Bul. testâ conicâ, basi latiusculâ, compressè umbilicatâ, anfractibus sex, rotundatis, minutissimè striatis, columellâ latè verticaliter dilatâ, callositate parvâ supra, aperturâ ferè rotundâ, labro subreflexo; pallidè castaneâ, subcorneâ, callositate albâ.*

THE LITTLE TUFT BULIMUS. Shell conical, rather broad at the base, compressly umbilicated, whorls six in number, rounded, very minutely striated, columella broadly vertically dilated, with a small callosity above, aperture nearly round, lip slightly reflected; light chestnut, somewhat horny, callosity white.

BENSON, MS.

Hab. Humeerpore, Bundelkhund, India; Benson.

This interesting little species is well distinguished by the broad convolution of the last whorl. Only two specimens were found.



626.



613.



627.



628.



629. a.



630.



629. b.



631.



632.



633.

BULIMUS.

PLATE LXXXV.

Species 613. (Mus. Cuming.)

BULIMUS LINOSTOMA. *Bul. testā fusiformi-ovatā, compressè umbilicatā, tenuiculā, anfractibus sex, lævibus, vel sub lente minutè striatis, columellā contortā, subplicatā et appressā, aperturā obliquè dilatatā, labro effuso; albidā, flammis cærulescentibus et cinereis ornatā, aperturā vividè violaceo-purpureā.*

THE THREADED BULIMUS. Shell fusiformly ovate, compressly umbilicated, rather thin, whorls six in number, smooth, or minutely striated beneath the lens, columella twisted, subplicate and appressed, aperture obliquely dilated, lip effused; whitish, ornamented with bluish and ash flames, aperture deep violet-purple.

Hab. Province of Santa Cruz, Bolivia.

M. D'Orbigny notices having found this delicately-coloured species in the woods of Santa Cruz, after rain, upon the ground as well as upon trees and shrubs, but in comparative scarcity.

Species 626. (Mus. Cuming.)

BULIMUS LIVIDUS. *Bul. testā acuminato-oblongā, tenui, vix umbilicatā, anfractibus sex ad septem, subrotundatis, sub lente creberrimè inciso-striatis, columellā tenuè reflexā, aperturā parviusculā, labro simplici; livido-olivaceā, maculis perpaucis subquadratis saturationibus infra suturas.*

THE LIVID BULIMUS. Shell acuminately oblong, thin, scarcely umbilicated, whorls six to seven in number, somewhat rounded, very closely engraved with striæ, columella thinly reflected, aperture rather small, lip simple; livid olive, with a few somewhat square spots of a darker colour beneath the sutures.

Hab. Venezuela.

A thin shell, of a peculiar mottled livid colouring, marked somewhat irregularly with square spots beneath the sutures.

Species 627. (Mus. Cuming.)

BULIMUS HACHENSIS. *Bul. testā acuminato-oblongā, subpyramidalī, subumbilicatā, anfractibus septem ad octo, convexis, lævibus, nitidis, columellā tenuè reflexā, ap-*

pressā, aperturā parviusculā, labro simplici; intus extusque roseo-luteā.

THE HACHA BULIMUS. Shell acuminately oblong, somewhat pyramidal, slightly umbilicated, whorls seven to eight in number, convex, smooth, shining, columella thinly reflected, appressed, aperture rather small, lip simple; pinkish yellow within and without.

Hab. Banks of the Rio Hacha, Guatemala.

A delicate yellow shell, of a peculiarly pyramidal form.

Species 628. (Mus. Cuming.)

BULIMUS REFLEXUS. *Bul. testā attenuato-ovatā, subinflatā, tenui, pellucidā, anfractibus quinque ad sex, planiusculis, substriatis, columellā tenui, parum reflexā, appressā, aperturā oblongā, labro simplici; pallidè corneā, strigis irregularibus castaneis, interdum ramosis, ornatā.*

THE REFLECTED BULIMUS. Shell attenuately ovate, somewhat inflated, thin, transparent, whorls five to six in number, rather flat, slightly striated, columella thin, but little reflected, appressed, aperture oblong, lip simple; pale horny, ornamented with chestnut streaks, sometimes branched.

PFEIFFER, Pro. Zool. Soc. 1842, p. 187.

Hab. Vicinity of Coquimbo (upon leaves of plants); Cuming.

An extremely thin, horny, inflated shell, belonging to the group of which *B. Broderipii* and *elegans* are typical examples.

Species 629. (Mus. Cuming.)

BULIMUS NUCINUS. *Bul. testā oblongo-ovatā, vix umbilicatā, crassiusculā, anfractibus quinque ad sex, convexis, minutè granulosis, columellā subincrassatim reflexā, appressā, aperturā ovatā, labro crasso, simplici; sordidè albā, strigis perpaucis rufo-fuscis ornatā.*

THE NUT-TREE BULIMUS. Shell oblong-ovate, scarcely umbilicated, rather thick, whorls five to six in number, convex, minutely granuled, columella rather thickly reflected, appressed, aperture ovate, lip thick, simple; dull white, ornamented with a few red-brown streaks.

Hab. — ?

February, 1850.

A stout solid, dull-whitish shell, marked with red-brown longitudinal streaks, having a finely granuled surface. Distinct from *B. granulosus*, though agreeing with it in general aspect.

Species 630. (Mus. Cuming.)

BULIMUS BALANOIDES. *Bul. testā cylindraceo-ovatā, solidiusculā, apice obtusā, anfractibus sex, plano-convexis, lævibus, columellā incrassatā, reflexā, aperturā parvi-
usculā, labro incrassato, reflexo; albidā, fasciis cas-
taneis duabus cingulatā, epidermide tenui hydrophanā
indutā.*

THE DATE-LIKE BULIMUS. Shell cylindrically ovate, rather solid, obtuse at the apex, whorls six in number, flatly convex, smooth, columella thickened, reflected, aperture rather small, lip thickened, re-
flected; whitish, encircled by two chestnut bands, covered with a thin hydrophanous epidermis.

JONAS, Pro. Zool. Soc. 1842, p. 188. Phil. Abbild. und Besch. *Bul.* pl. 6. f. 2.

Hab. Island of Mindoro, Philippines.

Of solid growth, allied in form to *B. ovoideus*.

Species 631. (Mus. Adams.)

BULIMUS IMMACULATUS. *Bul. testā acuminato-ovatā, vix umbilicatā, anfractibus sex ad septem, planiusculis, sub lente minutè et creberrimè inciso-striatis, columellā tenuè reflexā, appressā, aperturā ovatā, labro simplici; pallidè stramineā, circa umbilicum nitidè roseā.*

THE UNSPOTTED BULIMUS. Shell acuminately ovate, scarcely umbilicated, whorls six to seven in number, rather flat, beneath the lens minutely and very closely engraved with striæ, columella thinly reflected, ap-
pressed, aperture ovate, lip simple; pale straw-colour, delicate rose about the umbilicus.

ADAMS, MSS.

Hab. Jamaica.

An interesting species, for which I am indebted to Mr. Adams, of Jamaica, allied to *B. stramineus*, but of rather stouter substance and more acuminate growth.

Species 632. (Mus. Metcalfe.)

BULIMUS STRAMINEUS. *Bul. testā acuminato-ovatā, sub-inflatā, vix umbilicatā, anfractibus sex, convexis, sub lente minutissimè et creberrimè inciso-striatis, columellā reflexā, appressā, aperturā ovatā, labro vix reflexo; pellucido-stramineā, suturis indistinctè albimarginatis, apice nigro.*

THE STRAW-COLOURED BULIMUS. Shell acuminately ovate, rather inflated, scarcely umbilicated, whorls six in number, convex, beneath the lens very minutely and closely engraved with striæ, columella reflected, ap-
pressed, aperture ovate, lip slightly reflected; trans-
parent straw-colour, sutures indistinctly edged with white, apex black.

GUILDING, Trans. Linn. Soc. vol. xiv. pt. 2. p. 340.

Bulimus flavidus, Menke.

Hab. Island of St. Vincent, West Indies.

A more transparent shell than the preceding, and of more inflated growth.

Species 633. (Mus. Cuming.)

BULIMUS SPRETUS. *Bul. testā pyramidal-conicā, solidi-
usculā, anfractibus sex ad septem, plano-convexis, sub lente minutissimè decussatim striatis, columellā incras-
satā, aperturā parviusculā, labro vix reflexo; pallidè
stramineā, castaneo-nigricante circa columellam et
aperturæ marginem, epidermide tenui adustā basin
versus indutā.*

THE DISREGARDED BULIMUS. Shell pyramidally conical, rather solid, whorls six to seven in number, flatly convex, very minutely decussately striated beneath the lens, columella thickened, aperture rather small, lip slightly reflected; pale straw-colour, chestnut black round the umbilicus and edge of the aperture, covered towards the base with a thin burnt-brown epidermis.

Hab. Island of Romblon, Philippines; Cuming.

This species, of which Mr. Cuming collected several species, has been confounded with *B. cincinnus*, from which it differs principally in being of a more truly conical form.



634.



635.



636.



637.



638.



639.



640.



641.



642.



643.

BULIMUS.

PLATE LXXVI.

Species 634. (Mus. Cuming.)

BULIMUS MONTANUS. *Bul. testā oblongo-cylindræā, tenuiculā, compressè umbilicatā, anfractibus septem, obliquè subrudè striatis et minutissimè granulatis, ad suturas obscurè crenulatis, columellā verticali, sublatè dilatatā, aperturā parviusculā, labro subreflexo; pallidè castaneā, semipellucidā, suturis et apice albidis.*

THE MOUNTAIN BULIMUS. Shell oblong-cylindrical, rather thin, compressly umbilicated, whorls seven in number, obliquely somewhat rudely striated and very minutely granulated, obscurely crenulated at the sutures, columella vertical, rather broadly dilated, aperture rather small, lip slightly reflected; pale chestnut, semitransparent, sutures and apex whitish.

DRAPARNAUD, Hist. Moll. p. 74. pl. 4. f. 22.

Bulimus Lackhamensis, Fleming.

Helix Lackhamensis, Montagu.

Bulimus Montacuti, Jeffreys.

Bulimus Collini, Michaud.

Helix buccinata, Alten.

Hab. Britain, Germany, France, Spain.

A minutely granulated, delicate brown shell, varying a little in size in different localities.

Species 635. (Mus. Metcalfe.)

BULIMUS SEDUCTILIS. *Bul. testā oblongo-cylindræā, sinistrali, compressè umbilicatā, anfractibus decem, planiusculis, densè convolutis, columellā verticali, dilatatā, aperturā parvā, bidentatā; corneo-albidā.*

THE REMOTE BULIMUS. Shell oblong-cylindrical, sinistral, compressly umbilicated, whorls ten in number, rather flattened, thickly convoluted, columella vertical, dilated, aperture small, two-toothed; horny-white.

PFEIFFER, Symbolæ, vol. i. p. 85.

Pupa seductilis, Ziegler.

Bulimus Niso, Pfeiffer.

Hab. Dalmatia, Austria.

A small, cylindrical, sinistral shell, remarkably closely convoluted.

Species 636. (Mus. Metcalfe.)

BULIMUS TRIDENS. *Bul. testā oblongā, compressè umbilicatā, anfractibus septem, planiusculis, subtiliter stri-*

atis, columellā verticali, dilatatā, aperturā parvā, subquadratā, tridentatā, labro incrassato, subreflexo; corneo-fuscā.

THE THREE-TOOTHED BULIMUS. Shell oblong, compressly umbilicated, whorls seven in number, rather flattened, finely striated, columella vertical, dilated, aperture small, somewhat square, three-toothed, lip thickened, slightly reflected; horny-brown.

BRUGUIERE, Enc. Méth. vol. i. p. 350.

Helix tridens, Müller.

Turbo tridens, Gmelin.

Pupa tridens, Draparnaud.

Chondrus tridens, Cuvier.

Jaminea tridens, Risso.

Bulimus variedentatus, Hartman.

Hab. Germany, France, Austria, Sardinia.

Of a less cylindrical form than the preceding, of fewer whorls, and more horny substance.

Species 637. (Mus. Cuming.)

BULIMUS PUELLARIS. *Bul. testā acuminato-ovatā, tenuiculā, subdiaphanā, vix umbilicatā, anfractibus sex, convexis, lævibus, sub lente creberrimè et minutissimè inciso-striatis, columellā tenuè reflexā, aperturā ovatā, labro simplici; eximie albā.*

THE MAIDEN BULIMUS. Shell acuminate ovate, rather thin, somewhat diaphanous, scarcely umbilicated, whorls six in number, convex, smooth, beneath the lens very closely and minutely engraved with striæ, columella thinly reflected, aperture ovate, lip simple; delicate white.

Hab. Brazil.

An elegantly convoluted semitransparent shell, not referable to any hitherto described species.

Species 638. (Mus. East India Company.)

BULIMUS HARRISII. *Bul. testā ovatā, subventricosā, compressè umbilicatā, anfractibus septem, obliquè creberrimè plicato-striatis, suturis subimpressis, columellā latè dilatatā, verticali, aperturā suborbiculari, labro simplici, vix reflexo; sordidè albā, nitente.*

HARRIS'S BULIMUS. Shell ovate, somewhat ventricose, compressly umbilicated, whorls seven in number, obliquely very closely plicately striated, sutures

rather impressed, columella broadly dilated, vertical, aperture nearly orbicular, lip simple, scarcely reflected; dull white, shining.

Hab. Ankobar, Abyssinia.

Dedicated, at the request of Mr. Benson, to whom I am indebted for calling my attention to this shell in the museum of the East India Company, to the memory of its enterprising discoverer, Sir C. W. Harris.

Species 639. (Mus. Cuming.)

BULIMUS INUTILIS. *Bul. testā ovatā, tenuiculā, umbilicatā, anfractibus sex, subventricosus, rudè tenuistriatis, columellā dilatatā, verticali, aperturā ovatā, labro simplici; fuscescente.*

THE INSIGNIFICANT BULIMUS. Shell ovate, rather thin, umbilicated, whorls six in number, rather ventricose, rudely finely striated, columella dilated, vertical, aperture ovate, lip simple; light brown.

Hab. — ?

There is little to characterize this species, of which Mr. Cuming has several specimens, yet it is distinct from any previously described.

Species 640. (Mus. East India Company.)

BULIMUS EOUS. *Bul. testā cylindraceo-oblongā, obesusculā, compressè umbilicatā, anfractibus sex, convexo-planis, columellā verticali, latè dilatatā, aperturā suborbiculari, productā, marginibus laminā conjunctis; albā.*

THE EASTERN BULIMUS. Shell cylindrically oblong, rather stout, compressly umbilicated, whorls six in number, convexly flattened, columella vertical, broadly dilated, aperture nearly orbicular, produced, margins joined together by a lamina; white.

Hab. Hindoostan.

Collected by Dr. Griffiths, and very closely allied to the species named in honour of that gentleman represented at Sp. 302.

Species 641. (Mus. Cuming.)

BULIMUS GUINEENSIS. *Bul. testā fusiformi-conicā, tenui, vix umbilicatā, anfractibus septem, subtilissimè concentricè striatis, striis peculiariter arcuatis, columellā valdè contortā, tenuissimè reflexā, aperturā parvius-*

culā, labro simplici, supernè sinuato; pallidè virescente-stramineā.

THE GUINEA BULIMUS. Shell fusiformly conical, thin, scarcely umbilicated, whorls seven in number, very finely concentrically striated, striæ peculiarly arched, columella much twisted, very thinly reflected, aperture rather small, lip simple, sinuated at the upper part; pale greenish straw-colour.

JONAS, Phil. Abbild. and Besch. Conch. vol. i. p. 54. Bul. pl. 1. f. 4.

Hab. Guinea.

A very delicate, thin shell, chiefly remarkable for the twisted growth of the columella, and for the sinuated lip, which causes the striæ to be formed in curves.

Species 642. (Mus. Cuming.)

BULIMUS TEPIDULUS. *Bul. testā subpyramidalī, compressè umbilicatā, anfractibus septem, convexis, lævibus, suturis impressis, columellā verticali, aperturā parvā, labro simplici; sordidè albā, apicem versus fuscescente.*

THE COOL BULIMUS. Shell somewhat pyramidal, compressly umbilicated, whorls seven in number, convex, smooth, sutures impressed, columella vertical, aperture small, lip simple; dull white, light brown towards the apex.

Hab. Canary Islands.

This does not agree with any of the species from the Canary Islands described by Webb and Berthelot.

Species 643. (Mus. Cuming.)

BULIMUS CONFINIS. *Bul. testā ovatā, subventricosā, profundè umbilicatā, anfractibus sex, rotundatis, tenuè striatis, columellā latè dilatatā, subreflexā, aperturā orbiculari, labro simplici; pellucido-corneā, opaco-albido variegatā.*

THE BORDERER BULIMUS. Shell ovate, rather ventricose, deeply umbilicated, whorls six in number, rounded, finely striated, columella broadly dilated, a little reflected, aperture orbicular, lip simple; transparent horny, variegated with opaque whitish.

Hab. Texas, United States.

The locality of this species may be regarded as about the northern limit of the genus in the new world.



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653.

BULIMUS.

PLATE LXXXVII.

Species 644. (Mus. Metcalfe.)

BULIMUS FOLLICULUS. *Bul. testā abbreviato-cylindraca, compressè umbilicatā, apice acuminatā, anfractibus rotundatis, tumidis, subtilissimè costatis, suturis impressis, columellā verticali, dilatatā, aperturā sub-circulari, marginibus laminā callosā conjunctis; corneo-fuscescente.*

THE WHEAT-HUSK BULIMUS. Shell abbreviately cylindrical, compressly umbilicated, acuminate at the apex, whorls rounded, swollen, very finely ribbed, sutures impressed, columella vertical, dilated, aperture nearly round, with the margins joined by a callous lamina; horny brown.

PFEIFFER, Symbolæ, vol. iii. p. 83.

Carychium costatum, Hutton.

Hab. Bengal.

Partaking somewhat of the typical form of *B. Gossei* of the West Indies.

Species 645. (Mus. Metcalfe.)

BULIMUS LUBRICUS. *Bul. testā oblonga-ovatā, apice obtusiusculā, anfractibus sex, convexis, lævibus, nitentibus, columellā arcuatā, callosā, vix obsoletè truncatā, aperturā parvā, labro simplici, intus subincrassato; fuscescente, vitreā.*

THE SLIPPERY BULIMUS. Shell oblong-ovate, rather obtuse at the apex, whorls six in number, convex, smooth, shining, columella arched, callous, slightly obsoletely truncated, aperture small, lip simple, slightly thickened within; brownish, glassy.

BRUGUIERE, Enc. Méth. vol. i. p. 311. no. 23.

Helix lubrica, Müller.

Helix subcylindrica, Chemnitz.

Turbo glaber, Da Costa.

Achatina lubrica, Michaud.

Zua lubrica, Leach.

Cionella lubrica, Jeffreys.

Columna lubrica, Jan.

Styloides lubricus, Fitzing.

Bulimus nitens, Schmidt.

Hab. Europe and the British Isles. Massachusetts, North America; Gould.

This is the most abnormal species of the genus, and affects a colder latitude by several degrees than any other. The

shell is distinguished by its shining glassy composition and by an inclination in the columella to be truncated, partaking in these respects of the character of the small glassy *Achatinæ*. Dr. Gould describes having found it in great abundance in the woods of Oak Island, Massachusetts, after a warm October rain, clinging to the fallen leaves, from which they disappeared as the moisture evaporated. It inhabits the British Isles throughout, and has a wide range in Spain, Portugal, Italy, Switzerland, France, and Germany, reaching as far north as Sweden.

Species 646. (Mus. Cuming.)

BULIMUS OPARANUS. *Bul. testā subulatā, vix umbilicatā, spiræ suturis impressis, anfractibus septem, rotundatis, concentricè striatis, columellā verticaliter tenuè dilatā, aperturā parvā, supernè sinuatā, labro simplici; pellucido-vitreā, stramineā.*

THE OPARA BULIMUS. Shell subulate, scarcely umbilicated, sutures of the spire impressed, whorls seven in number, rounded, concentrically striated, columella vertically thinly dilated, aperture small, sinuated at the upper part, lip simple; transparent glassy, straw-colour.

PFEIFFER, Pro. Zool. Soc., 1846, p. 34.

Hab. Island of Opara, Society group (at the roots of plants); Cuming.

A thin, glassy, subulate shell, delicately concentrically striated after the manner of those from Jamaica represented in Pl. 84.

Species 647. (Mus. Metcalfe.)

BULIMUS OBSCURUS. *Bul. testā oblongā, compressè umbilicatā, anfractibus septem, convexis, tumidiusculis, obliquè striatis, columellā verticaliter dilatā, aperturā parvā, subquadrato-ovatā, obliquā, labro subeffuso; castaneo-fuscā.*

THE OBSCURE BULIMUS. Shell oblong, compressly umbilicated, whorls seven in number, convex, rather swollen, obliquely striated, columella vertically dilated, aperture small, somewhat squarely ovate, oblique, lip rather effused; chestnut-brown.

DRAPARNAUD, Hist. Moll. p. 74. pl. 4. f. 23.

Helix obscura, Müller.

Bulimus hordeaceus, Bruguière.

February, 1850.

Turbo rupium, Da Costa.

Ena obscura, Leach.

Merdigera obscura, Held.

Hab. Europe and the British Isles.

Allied to *B. montanus*, from which it differs in form, and is uniformly of smaller size.

Species 648. (Mus. Cuming.)

BULIMUS LINEARIS. *Bul. testā subulatā, minutè compressè umbilicatā, anfractibus decem, plano-convexis, subtilissimè arcuatim striatis, lineā elevatā supernè marginatis, columellā brevi, tenuè reflexā, aperturā parvā, labro simplici; pellucido-corneā, stramineā.*

THE LINEAR BULIMUS. Shell subulate, minutely compressly umbilicated, whorls ten in number, flatly convex, very finely arcuately striated, margined round the upper part with a raised line, columella short, thinly reflected, aperture small, lip simple; transparent horny, straw-colour.

KRAUSS, Sudafrik. Moll. p. 78. pl. 5. f. 3.

Hab. Port Natal, South Africa (near the river Limpopo); Wahlberg.

A delicate glassy shell, in which the suture is distinguished throughout by a fine elevated ridge.

Fig. 649 proves to be a variety of *B. subula*, Sp. 494.

Species 650. (Mus. Metcalfe.)

BULIMUS QUADRIDENS. *Bul. testā cylindraceo-oblongā, sinistrali, compressè umbilicatā, anfractibus octo, plano-convexis, obliquè striatis, aperturā subquadratā, quadridentatā, columellā labroque effusis; olivaceo-corneā, labro albido.*

THE FOUR-TOOTHED BULIMUS. Shell cylindrically oblong, sinistral, compressly umbilicated, whorls eight in number, flatly convex, obliquely striated, aperture somewhat square, four-toothed, lip and columella effused; olive horny, lip whitish.

BRUGUIERE, Enc. Méth. vol. i. p. 351. no. 91.

Helix quadridens, Müller.

Pupa quadridens, Draparnaud.

Chondrus quadridens, Cuvier.

Jaminia heterostropha, Risso.

Gonodon quadridens, Held.

Torquitha quadridens, Villa.

Hab. France, Switzerland, Italy, Spain.

This species partakes very much of the character of *Pupa*, and may, with equal propriety, be referred to that genus.

Species 651. (Mus. Benson.)

BULIMUS SIKKIMENSIS. *Bul. testā ovatā, subinflatā, spirā breviusculā, apice obtusā, anfractibus quatuor, ultimo multò maximo, concentricè tenuè striatis, suturis impressis, columellā subcontortā, tenuè reflexā, aperturā oblongā, supernè leviter sinuatā; pallidè olivaceā, semipellucidā.*

THE SIKKIM BULIMUS. Shell ovate, somewhat inflated, spire rather short, obtuse at the apex, whorls four in number, the last much the largest, concentrically finely striated, sutures impressed, columella slightly twisted, thinly reflected, aperture oblong, slightly sinuated at the upper part; pale olive, semitransparent.

Hab. Darjeeling, Sikkim-Himalaya.

An interesting species from the collection of Mr. Benson, of a different type from those inhabiting the western Himalaya range.

Species 652. (Mus. Cuming.)

BULIMUS TURRIFORMIS. *Bul. testā subulatā, subumbilicatā, anfractibus octo, convexis, subtilissimè concentricè striatis, columellā tenuè reflexā, aperturā parvā, labro simplici; pellucido-corneā, stramineā.*

THE TURRETED BULIMUS. Shell subulate, slightly umbilicated, whorls eight in number, convex, very finely concentrically striated, columella thinly reflected, aperture small, lip simple; transparent horny, straw-colour.

KRAUSS, Sudafrik. Moll. p. 78. pl. 5. f. 2.

Hab. Natal; Wahlberg.

Very closely allied to *B. Oparanus* from the Society Islands.

Species 653. (Mus. Benson.)

BULIMUS SOLITARIUS. *Bul. testā globoso-conicā, umbilicatā, anfractibus sex, rotundatis, obliquè striatis, columellā brevi, parim dilatatā, aperturā suborbiculari, labro simplici; albidā, fusco fasciatā aut variegatā.*

THE SOLITARY BULIMUS. Shell globosely conical, umbilicated, whorls six in number, rounded, obliquely striated, columella short, but little dilated, aperture nearly orbicular, lip simple; whitish, banded or variegated with brown.

PFEIFFER, Symbolæ, vol. ii. p. 122.

Helix solitarius, Poiret.

Helix conoidea, Draparnaud.

Bulimus conoideus, Jan.

Hab. Southern Europe.

The most trochiform of any species of the genus.



655.



654.



656.



148.5



657. a.



658.



657. b.



657. c.



659.



660.

BULIMUS.

PLATE LXXXVIII.

Species 654. (Mus. Cuming.)

BULIMUS EXIGUUS. *Bul. testā oblongā, compressè umbilicatā, anfractibus quinque, subrotundatis, columellā verticaliter dilatatā, aperturā parvā, rotundatā, labro subreflexo; castaneo-corneā.*

THE PUNY BULIMUS. Shell oblong, compressly umbilicated, whorls five in number, somewhat rounded, columella vertically dilated, aperture small, rounded, lip slightly reflected; chestnut horny.

Hab. St. Domingo; Sallè.

A little dark horny species, approaching somewhat in general aspect to *B. cœnopictus* of Hindoostan.

Species 655. (Mus. Belcher.)

BULIMUS MEIACOSHIMENSIS. *Bul. testā subpyramidal-oblongā, vix umbilicatā, anfractibus decem, subangustis, columellā verticaliter reflexā, aperturā rotundā; pellucido-corneā.*

THE MEIACOSHIMA BULIMUS. Shell somewhat pyramidally oblong, scarcely umbilicated, whorls ten in number, rather narrow, columella vertically reflected, aperture rounded; transparent horny.

ADAMS and REEVE, Moll. Voy. Samarang, Pl. 14. f. 5.

Hab. Islands of Ty-pin-san and Koo-Kien-san of the Meiacoshima group, Yellow Sea.

A small thin horny species, found by Mr. Arthur Adams on decayed leaves among the loose stones surrounding the tombs in the above-named islands.

Species 656. (Mus. Cuming.)

BULIMUS CONCENTRICUS. *Bul. testā subacuminato-oblongā, vix umbilicatā, anfractibus septem, subventricosus, concentricè tenuistriatis, columellā tenuè reflexā, aperturā subamplā, supernè sinuatā; pellucido-stramineā.*

THE CONCENTRIC BULIMUS. Shell somewhat acuminate oblong, scarcely umbilicated, whorls seven in number, rather ventricose, concentrically finely striated, columella thinly reflected, aperture rather large, sinuated at the upper part; transparent straw-colour.

Hab. Liberia, West Africa.

An extremely delicate inflated species, of the *Glandina* type, allied to *B. Guineensis*.

Species 148. (Mus. Metcalfe.)

BULIMUS HENNAHI. *Bul. testā acuminato-ovatā, umbilicatā, anfractibus sex ad septem, rotundatis, rugoso-striatis, columellā reflexā, aperturā ovatā, labro simplici; albidā, lineis purpureo-nigricantibus longitudinaliter irregulariter notatā, aperturæ fauce purpureo-nigricante, apice roseo.*

HENNAH'S BULIMUS. Shell acuminate ovate, umbilicated, whorls six to seven in number, rounded, roughly striated, columella reflected, aperture ovate, lip simple; whitish, irregularly longitudinally marked with purple-black lines, apex pink.

GRAY, Spicilegia Zoologica, part 1. p. 5. pl. 5. f. 1.

Bulimus lychnorum, Sowerby.

Bulimus cactorum, D'Orbigny.

Hab. Peru.

To this species, which is extremely variable in colour, must be added *B. erubescens*, mihi, Sp. 148, of which it is a variety.

Species 657. (Fig. a, b, c, Mus. Cuming.)

BULIMUS SALLEANUS. *Bul. testā subulatā, solidiusculā, anfractibus undecim, planulatis, concentricè tenuissimè striatis, columellā reflexā, aperturā parvā, basi subflexuosā, labro simplici; albicante, epidermide tenui indutā.*

SALLE BULIMUS. Shell subulate, rather solid, whorls eleven in number, flattened, concentrically very finely striated, columella reflected, aperture small, slightly flexuous at the base, lip simple; transparent white, covered with a thin epidermis.

Hab. St. Domingo: Sallè.

An interesting, sharply subulate, solid, ground species.

Species 658. (Mus. Miers.)

BULIMUS CONTORTUPLICATUS. *Bul. testā oblongo-ovatā, subventricosā, anfractibus quinque, convexis, minutissimè indentatis, columellā subincrassatā, uniplicatā, aperturā oblongo-ovatā, labro subincrassato, reflexo; albidā, partim rosaceā, epidermide tenui corneā luteo-olivaceā indutā, aperturæ fauce albā.*

THE TWISTED-PLAITED BULIMUS. Shell oblong-ovate, rather ventricose, whorls five in number, convex,

very minutely indented, columella rather thickened, reflected; whitish, partially tinged with pink, covered with a thin horny olive-yellow epidermis, interior of the aperture white.

Hab. Minas Geraes, Brazil; Miers.

This fine species is nearest allied to *B. pudicus*, from which the plicate growth of the columella differs materially in form; whilst the shell is of a more oblong growth.

Species 659. (Mus. Cuming.)

BULIMUS DOMINICUS. *Bul. testā ovatā, tenui, inflatā, anfractibus quinque, sub lente minutissimè decussatim striatis, columellā tenuè reflexā et appressā, aperturā ovatā, labro simplici; pellucido-corneā, fasciā castaneā interruptā cingulatā, anfractu ultimo trifasciato.*

THE DOMINGO BULIMUS. Shell ovate, thin, inflated, whorls five in number, very minutely decussately striated beneath the lens, columella thinly reflected and appressed, aperture ovate, lip simple; transparent horny, encircled with an interrupted chestnut band, last whorl three-banded.

Hab. St. Domingo; Sallè.

Resembling *B. Humboldtii*, but much smaller and more transparent, and of a different form.

Species 660. (Mus. Cuming.)

BULIMUS LIBERIANUS. *Bul. testā oblongo-ovatā, tumidi-
diusculā, compressè umbilicatā, apice obtusā, anfractibus
sex, convexis, ad suturas tenuimarginatis, obliquè sub-
tiliter et creberrimè elevato-striatis, columellā latè ver-
ticaliter reflexā, aperturā obliquè subquadratā; pellu-
cido-albā, immaculatā.*

THE LIBERIAN BULIMUS. Shell oblong-ovate, rather swollen, compressly umbilicated, obtuse at the apex, whorls six in number, convex, thinly margined at the sutures, obliquely finely and very closely sculptured with raised striæ, columella broadly rather vertically reflected, aperture obliquely square-formed; transparent white, unspotted.

GOULD, MSS.

Hab. Liberia, West Africa.

This very interesting species belongs to the same type as the *Pupa grandis* of the islands of Socotra and Madagascar, and, bordering on the confines of the two genera, may be referred with equal propriety to either.



661. a.



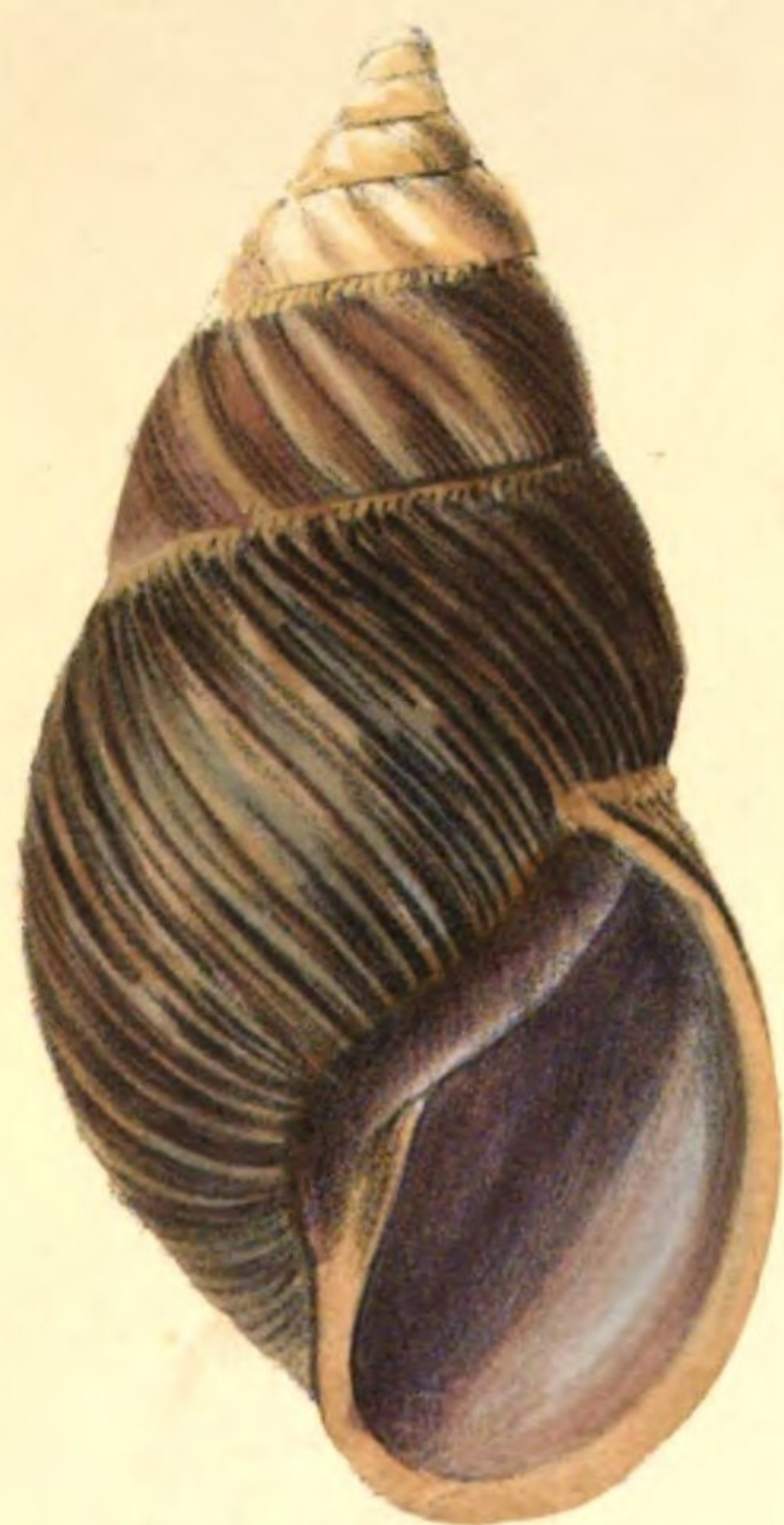
367. b.



661. b.



212. b.



662. a.



662. b.



367. c.

BULIMUS.

PLATE LXXXIX.

Sp. 367. (Mus. Cuming.)

BULIMUS INTERSTINCTUS. Having been favoured with finer specimens of this very interesting species, collected by Dr. Perkins at Cape Palmas, West Africa, I avail myself of the opportunity of figuring two characteristic varieties.

Species 661. (Mus. Cuming.)

BULIMUS KELLETTII. *Bul. testā ovatā, subventricosā, anfractibus quinque, convexis, rugoso-striatis, ad suturas subplicato-crenulatis, anfractu ultimo multo maximo, columellā incrassatā, peculiariter contortā, aperturā subeffusā, labro incrassato, reflexo; cærulescente-griseā saturatè quadrifasciatā, strigis angustis albis interruptis et undatis longitudinaliter fulguratā, columellā et aperturæ fauce iridescente-purpureis.*

KELLETT'S BULIMUS. Shell ovate, rather ventricose, whorls five in number, convex, roughly striated, somewhat plicately crenulated at the sutures, last whorl much the largest, columella thickened, peculiarly twisted, aperture rather effused, lip thickened, reflected; bluish-grey, encircled with four bands of a darker colour, and longitudinally lightning-marked with narrow waved and interrupted white streaks.

Hab. Ecuador?

I have much pleasure in naming this new and very beautiful species after the zealous naturalist, Capt. Kellett, of H. M. S. Herald, by whom it was procured in Central America, and is probably from Ecuador.

Species 212. (Mus. Miers.)

BULIMUS OVATUS. An interesting white-lip dwarf variety, from Bahia, described by M. Sowerby in his 'Conchological Illustrations' under the name *B. auritus*.

Species 662. (Fig. a and b. Mus. Cuming.)

BULIMUS TORRIDUS. *Bul. testā oblongo-tumidā, apice subpapillari, anfractibus septem, convexis, obliquè elevato-striatis, ad suturas subtiliter et creberrimè crenulatis, columellā simplici, aperturā ovatā, labro parum reflexo; ustulato-fuscā, epidermide olivaceā indutā, aperturæ fauce intensè fuscā.*

THE TORRID BULIMUS. Shell oblong-tumid, somewhat papillary at the apex, whorls seven in number, convex, obliquely elevately striated, finely and very closely crenulated at the sutures, columella simple, aperture ovate, lip but little reflected; scorched-brown, covered with an olive epidermis, interior of the aperture dark brown.

GOULD, MSS.

Hab. Liberia, West Africa.

The African species received from Dr. Gould, of Boston, United States, just at the close of this monograph, will probably be described, if not so already, in the Proceedings of the Natural History Society of that city. They are of an extremely interesting character, and were collected by Dr. George A. Perkins, a zealous American missionary, for many years resident at Cape Palmas.

February, 1850.

BULLETIN

PLATE XXXI

Specimen 111 (Plate XXXI)

Specimen 111. A. ...
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Specimen 112 (Plate XXXI)

Specimen 112. A. ...
...
...

Specimen 113 (Plate XXXI)

Specimen 113. A. ...
...
...

Specimen 114 (Plate XXXI)

Specimen 114. A. ...
...
...

Specimen 115 (Plate XXXI)

Specimen 115. A. ...
...
...

Specimen 116 (Plate XXXI)

Specimen 117 (Plate XXXI)

BULIMUS.

	Plate.	Species.		Plate.	Species.
<i>abbreviatus</i> , Jan.	LIX.	399	<i>auratus</i> , Pfr.	LI.	335
<i>Abyssinicus</i> , Ruppell ...	XLVI.	296	<i>aureus</i> , Swainson	XXIX.	187
<i>abyssorum</i> , D'Orb.	XXXVI.	213	<i>auripigmentum</i> , Reeve	XXIX.	178
<i>Achatinaceus</i> , Pfr.	LXVII.	470	<i>auritus</i> , Sow.	XXXVI.	212
<i>Achatinoides</i> , Ziegler	L.	327	<i>auris-bovina</i> (<i>Auric.</i>), Lam. .	XXX.	185
<i>acuminatus</i> (<i>Helix</i>), Sow....	XI.	60	<i>auris-leporis</i> (<i>Auric.</i>), Lam...	XLI.	259
<i>acutus</i> (<i>Helix</i>), Muller	LXVI.	467	<i>auris-Midæ</i> , Chemn.	XXVIII.	170
<i>Adamsii</i> , Reeve	XIII.	73	<i>auris-muris</i> (<i>Helix</i>), Mor....	XLI.	261
<i>Adamsoni</i> , Gray	XXVI.	165	<i>auris-Sileni</i> , Born.	XXV.	164
<i>Adansonii</i> , Pfr.	L.	327	<i>auris-vulpina</i> , Chemn.	XXX.	180
<i>adoptus</i> , Reeve	LXXXII.	608	<i>Babauchii</i> , Anton	LXIII.	431
<i>Ægle</i> , Brod.	X.	49	<i>bacterionides</i> , D'Orb.	LXVIII.	482
<i>ægotis</i> , Menke	LIV.	357	<i>badiosa</i> (<i>Helix</i>), Fér.	LXVI.	469
<i>affinis</i> , Brod.	XXIII.	154	<i>badius</i> , Sow.	XXXIX.	235
<i>Africanus</i> , Reeve	L.	330	<i>bæticatus</i> (<i>Helix</i>), Fér	LXX.	505
<i>albatus</i> (<i>Helix</i>), Fér.	LI.	333	<i>Bahiensis</i> , Moric.	LXIV.	442
<i>Alberti</i> , Brod.	V.	22	<i>Bairdii</i> , Reeve	XLIII.	272
<i>albicans</i> , Brod.	XXII.	141	<i>balanoides</i> , Jonas	LXXXV.	630
<i>albizonatus</i> , Reeve	LXXXI.	604	<i>Bamboucha</i> , W. & B.	LXIX.	493
<i>albus</i> , Sow.	XIII.	75	<i>barbarus</i> (<i>Helix</i>), Linn.	LXXV.	539
<i>Alepi</i> (<i>Helix</i>), Férussac	LX.	413	<i>Beckianus</i> , Pfr.	LXVIII.	480
<i>Alto-Peruvianus</i> , Reeve	LXXII.	521	<i>bellulus</i> , Jonas	XXIV.	160
<i>alternans</i> , Beck.	XXIII.	152	<i>Bengalensis</i> , Lam.	XLV.	289
<i>alutaceus</i> , Reeve	LXXII.	522	<i>Benguelensis</i> , Pfr.	XLVI.	298
<i>ambustus</i> , Reeve.	LXXIV.	535	<i>Bensoni</i> , Reeve	LXXVIII.	571
<i>Andicola</i> , Pfr.	LV.	364	<i>Bergeri</i> , Pfr.	LXVIII.	489
<i>angiosstoma</i> , Wagner	XLVIII.	312	<i>Bertheloti</i> , ib.	LXXV.	541
<i>Angosturensis</i> , Gruner	XLVII.	307	<i>bicinctus</i> , Recluz	LI.	333
<i>Angosturensis</i> , Gruner	LIX.	402	<i>bicolor</i> , Sow.	XLIV.	276
<i>angulatus</i> , Wagn.	XL.	248	<i>bidens</i> , Krynicki	LXVI.	465
<i>Antoni</i> , Pfr.	LXXX.	589	<i>bicoloratus</i> , Lea	V.	22
<i>aplomorphus</i> , Jonas	X.	47	<i>bifasciatus</i> , Philippi	XXX.	182
<i>apodemetes</i> , D'Orb.	XXII.	142	<i>bilabiatu</i> s, Brod. & Sow.	XXXIII.	201
<i>appendiculatus</i> , P. & M.	LXVI.	465	<i>bifulguratus</i> , Reeve	LXXXII.	606
<i>aquilus</i> , Reeve	XXII.	138	<i>bilineatus</i> , Sow.	XXI.	132
<i>arcuatus</i> , Pfr.	LXVII.	478	<i>bivittatus</i> , Sow.	LXXXI.	597
<i>articulatus</i> , Turton	LXIV.	444	<i>Blainvillianus</i> , Pfr.	XXV.	161
<i>astrapoides</i> , Jonas	XXXI.	189	<i>Boholensis</i> , Brod.	VIII.	37
<i>atomatus</i> , Gray	XXX.	184	<i>Boissieri</i> , Moric	LXIV.	449
<i>atrapoides</i> , Jonas	XXIV.	157	<i>Bolivianus</i> , Pfr.	XLIV.	281
<i>atricollosus</i> , Gould	XXXI.	188	<i>Bolivianus</i> , Pfr.	LXXXI.	599

	Plate.	Species.		Plate.	Species.
Bontia (Helix), Chemn.	XLVIII.	315	cinctus, Jay	XXIX.	179
Boysianus, Benson	LXXVIII.	575	cinereus, Reeve	LVI.	372
breviculus, Pfr.	XII.	65	cinnamomeo-lineatus, Moric ..	XLVI.	293
Bridgesii, Pfr.	XIX.	117	citrino-vitreus, Moric.	XLVI.	290
Broderipii, Sow.	XVI.	97	citrinus, Brug.	XXXI.	187
Bronni, Pfr.	XXXVI.	212	Clausiliaformis, Menke	LXVI.	465
bullula, Brod.	XII.	68	Clausilioides, Reeve	LXXXIII.	523
Burchellii, Gray	LXXVI.	548	clava, Reeve	LXX.	500
Buschii, Pfr.	XIX.	112	clavator, Petit	LII.	345
Cacticolus, Reeve	LVIII.	393	clavulinus, Potiez	LXXX.	595
cactivorus, Brod.	XVIII.	103	clavulinus, Pot. & Mich.	LXXXIV.	621
cactorum, D'Orb.	LXXXVIII.	148	coagulatus, Reeve	LXXXVII.	558
calcareus, Brug.	LII.	344	coarctatus, Pfr.	XLI.	260
calcareus (Helix), Born.	LII.	342	cochleades, Pfr.	XIV.	82
calcareus, Parreyss	LXVI.	464	cœlebs, Benson	XLVII.	301
Caledonicus, Petit	XXV.	163	cænopictus (Pupa), Hutton .	LXIX.	492
Californicus, Reeve	LVI.	378	Collini, Michaud	LXXXVI.	634
caliginosus, Reeve	LXXXII.	609	coloratus, Nyst.	XXIV.	155
Calista, Brod.	VIII.	38	columella, Philippi	LXX.	502
calobaptus, Jonas	IX.	43	columellaris, Reeve	LXXXIII.	528
calvus, Sow.	XX.	126	compactus, Frivaldsky	LXXV.	546
Calypso, Brod.	VII.	31	concentricus, Reeve	LXXXVIII.	656
camelopardalis, Brod.	VIII.	36	concinus (Helix), Sow.	X.	52
canaliculatus, Pfr.	XLI.	256	confinis, Reeve	LXXXVI.	643
candelaris, Pfr.	LX.	408	confusus, Reeve	XLVIII.	316
Canimarensis, Pfr.	LX.	468	coniformis, Pfr.	LXV.	451
cantatus, Reeve	LVII.	375	connivens, Reeve	LVIII.	388
Cantorii, Philippi	LX.	404	conoideus, Jan.	LXXXVII.	653
Capueira, Spix	XLVIII.	312	conspersus, Sow.	XXII.	137
Caraccasensis, Reeve	LXXIX.	580	constrictus, Pfr.	LIX.	402
Caribbeorum, Lam.	XLIX.	320	contiguus, Reeve	LXXIX.	582
Caripensis, Val.	XXVIII.	171	contortuplicatus, Reeve	LXXXVIII.	658
carneus, Pfr.	LX.	409	contusus, Reeve	XXXVII.	220
castaneus, Pfr.	XXXII.	197	conulus, Reeve	LXXXVIII.	577
castrensis, Pfr.	LIX.	396	Coquimbensis, Sow.	XVI.	95
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nitidus, <i>Brod.</i>	XVIII.	103	Pazianus, <i>D'Orb.</i>	LVI.	377
nivicola, <i>Benson</i>	LXIX.	496	pellucidus, <i>Pfr.</i>	LXVIII.	487
nobilis, <i>Reeve</i>	V.	20	pemphigodes, <i>Jonas</i>	LXV.	453
<i>noctivagus</i> , <i>Parreyss</i>	LXVII.	471	Pentlandi, <i>Reeve</i>	LXXXIII.	614
nucinus, <i>Reeve</i>	LXXXV.	629	perdix, <i>Pfr.</i>	LIV.	355
nucleus, <i>Sow.</i>	XVII.	99	<i>perplexus</i> , <i>Sow.</i>	XXXI.	191
Numidicus, <i>Reeve</i>	LIII.	351	perspectivus, <i>Pfr.</i>	LXIII.	435
nux, <i>Brod.</i>	XXIII.	150	Peruvianus, <i>Brug.</i>	XVII.	101
Nympha, <i>Pfr.</i>	VIII.	41	pessulatus, <i>Reeve</i>	XXIII.	153
obeliscus (<i>Helix</i>), <i>Mor.</i>	LII.	343	Petiti, <i>Pfr.</i>	XXXVII.	222
obesatus (<i>Helix</i>), <i>Férussac</i> ..	LXX.	504	Pfeifferianus, <i>Reeve</i>	IV.	18
<i>oblitus</i> , <i>Reeve</i>	LVI.	376	phasianellus, <i>Val.</i>	XV.	88
obliquus, <i>Reeve</i>	LXXVI.	551	Philippinensis, <i>Pfr.</i>	I.	5
oblongus (<i>Helix</i>), <i>Mull.</i>	XXXV.	210	Philippii, <i>Pfr.</i>	XXII.	143
obscurus (<i>Helix</i>), <i>Mull.</i>	LXXXVII.	647	<i>phlogerus</i> , <i>D'Orb.</i>	XXVII.	168
<i>obsoletus</i> , <i>Ziegler</i>	LXI.	420	pictor, <i>Brod.</i>	IV.	19
obtusatus (<i>Helix</i>), <i>Gmel.</i> ...	LII.	344	Physoides, <i>Menke</i>	LXX.	507
obtusus (<i>Pupa</i>), <i>Drap.</i>	LXXIX.	583	<i>picturata</i> , <i>Férussac</i>	XLVI.	295
occultus, <i>Reeve</i>	LXXXIII.	617	pintadinus, <i>D'Orb.</i>	XLII.	265
octonoides, <i>Adams</i>	LXXXIV.	593	piperatus, <i>Sow.</i>	XVI.	96

	Plate.	Species.		Plate.	Species.
<i>planidens</i> , Mich.	XXXI.	190	<i>rhodocheilus</i> , Reeve	XXVIII.	173
<i>plectostylus</i> , Pfr.	XLII.	268	<i>rhodolarynx</i> , Reeve	LXXII.	518
<i>pæcilus</i> , D'Orb.	XVI.	91	<i>rhodospira</i> , Mor.	XXXIII.	203
<i>politus</i> , Reeve	XIII.	74	<i>rhodostoma</i> , Gray	XLIX.	323
<i>polygyratus</i> , Reeve	LXXIX.	578	<i>rimatus</i> , Pfr.	LIV.	359
<i>Popelairianus</i> , Nyst.	XXXIV.	204	<i>ringens</i> , Dunker	LXXV.	542
<i>porphyrius</i> , Pfr.	XV.	89	<i>Rivassii</i> , D'Orb.	XX.	122
<i>porraceus</i> , Jay	IX.	45	<i>Romblonensis</i> , Pfr.	VII.	34
<i>Powisianus</i> , Petit	XXVII.	167	<i>rosaceus</i> , King	XV.	87
<i>prætextus</i> , Reeve	LXXI.	515	<i>roseatus</i> , Reeve	LIV.	353
<i>pretiosus</i> , Cantor	LXXXIII.	619	<i>Rossmässleri</i> , Pfr.	LX.	405
<i>primula</i> , Reeve	LVII.	385	<i>rubellus</i> , Brod.	XVIII.	104
<i>primularis</i> , Reeve	LXXXIII.	527	<i>rubescens</i> , Reeve	XXIII.	148
<i>princeps</i> , Sow.	XV.	90	<i>rubicundulus</i> , Gould	LV.	367
<i>procerus</i> , Adams	LXIX.	494	<i>rubrifasciatus</i> , Reeve	XLIV.	277
<i>Proteus</i> , Brod.	XVII.	100	<i>rudis</i> , Anton	XLV.	286
<i>proximus</i> , Sow.	LXXXII.	607	<i>rufistrigatus</i> , Benson	LXXVIII.	570
<i>pruinus</i> , Sow.	XX.	120	<i>rufogaster</i> , Lesson	I.	4
<i>pseudo-Succinea</i> (<i>Helix</i>), Mor.	LXII.	429	<i>rufo-niger</i> , Fér.	LIX.	395
<i>pubescens</i> , Mor.	LXIII.	437	<i>rugatus</i> , Reeve	LXXVI.	552
<i>pudicus</i> (<i>Helix</i>), Linn.	XXXI.	191	<i>rugiferus</i> , Sow.	XX.	118
<i>pulchellus</i> , Brod.	XVIII.	104	<i>rugulosus</i> , Sow.	XX.	123
<i>puellaris</i> , Reeve	LXXXVI.	637	<i>rupestris</i> , Phil.	LXIX.	491
<i>pulicarius</i> , Reeve	XLII.	267	<i>rupicolus</i> , Reeve	XVI.	93
<i>pullus</i> , Gray	LXVII.	476	<i>Ruppellianus</i> , Pfr.	L.	329
<i>pulverulentus</i> , Pfr.	XXXIX.	241	<i>rusticus</i> , Mousson	LXXVIII.	574
<i>punctatus</i> , Anton	LXV.	452	<i>Salleanus</i> , Reeve	LXXXVIII.	657
<i>punctulatissimus</i> (<i>Clau.</i>), Less.	XXXVIII.	225	<i>Sandwicensis</i> , Pfr.	LXVII.	472
<i>punctulifer</i> , Sow.	XVI.	92	<i>sarcodes</i> , Pfr.	LXI.	414
<i>pupa</i> (<i>Helix</i>), Linn.	LXIII.	431	<i>Satyrus</i> , Brod.	VI.	29
<i>Pupiformis</i> , Brod.	XIV.	85	<i>Sayi</i> , Pfr.	LXV.	458
<i>Pupoides</i> (<i>Clau.</i>), Spix.	XXXVIII.	231	<i>scabiosus</i> , Sow.	XIV.	84
<i>purpuratus</i> , Reeve	LXXI.	517	<i>Scalariformis</i> , Brod.	XXI.	129
<i>pustulosus</i> , Brod.	XX.	127	<i>Scalarioides</i> , Reeve	LXXX.	590
<i>purus</i> , Mousson	XXXI.	187	<i>Schiedeanus</i> , Pfr.	LIV.	361
<i>pyramidalis</i> (<i>Helix</i>), Sow.	XI.	59	<i>scitulus</i> , Reeve	LXXI.	513
<i>pythogaster</i> , Fér.	I.	2	<i>scobinatus</i> , Wood	XXXII.	199
<i>quadricolor</i> , Pfr.	XLII.	263	<i>sculpturatus</i> , Pfr.	XX.	125
<i>quadridens</i> (<i>Helix</i>), Muller ..	LXXXVII.	650	<i>scutulatus</i> , Brod.	XIX.	110
<i>quinquedentatus</i> , Pfr.	LXXXIII.	618	<i>seductilis</i> , Pfr.	LXXXVI.	635
<i>Quitensis</i> , Pfr.	XLVIII.	317	<i>segregatus</i> , Benson.	LXXIX.	587
<i>Recluzianus</i> , Pfr.	LXXIV.	530	<i>serperastrus</i> , Say	XL.	252
<i>reconditus</i> , Reeve	LXXVI.	549	<i>sex-dentatus</i> (<i>Clau.</i>), Spix. ..	XXXVIII.	224
<i>redditus</i> , Reeve	XLVII.	307	<i>Shongi</i> , Lesson	XXIV.	159
<i>Reevii</i> (<i>Helix</i>), Brod.	I.	6	<i>Sidoniensis</i> (<i>Helix</i>), Fér.	LXIII.	433
<i>reflexus</i> , Pfr.	LXXXV.	628	<i>signatus</i> (<i>Auric.</i>), Wagn. ...	XXXIII.	200
<i>regina</i> (<i>Helix</i>), Fér.	XXVII.	168	<i>signatus</i> , Sow.	LXIV.	444
<i>reticulatus</i> , Reeve	XXIV.	443	<i>Sikkimensis</i> , Reeve	LXXXVII.	651
<i>revolutus</i> , Ziegler	LXXXIII.	611	<i>simplex</i> , Jonas	XII.	63
<i>rhodacme</i> , Pfr.	XIV.	77	<i>Sindicus</i> , Benson	XLVII.	303

	Plate.	Species.		Plate.	Species.
<i>sinistralis</i> , <i>Reeve</i>	LXXXI.	603	<i>tener</i> , <i>Ziegler</i>	LXVII.	473
<i>Siquijorensis</i> , <i>Pfr.</i>	VIII.	42	<i>tenuissimus</i> (<i>Helix</i>), <i>Fér.</i> ...	XLV.	288
<i>smaragdinus</i> , <i>Reeve</i>	VI.	27	<i>tepidulus</i> , <i>Reeve</i>	LXXXVI.	642
<i>Socotrensis</i> , <i>Pfr.</i>	LXIV.	440	<i>terebella</i> , <i>Adams</i>	LXXXIV.	620
<i>solidus</i> , <i>Pfr.</i>	II.	9	<i>terebralis</i> , <i>Pfr.</i>	XIV.	79
<i>solitarius</i> (<i>Helix</i>), <i>Poiret</i> ...	LXXXVII.	653	<i>terebraster</i> , <i>Férussac</i>	LII.	341
<i>solivagus</i> , <i>Reeve</i>	LXXIV.	531	<i>Terverii</i> , <i>Forbes</i>	LXXV.	539
<i>solutus</i> , <i>Troschel</i>	LXXV.	540	<i>thamnoicus</i> , <i>D'Orb.</i>	XVI.	94
<i>sordidus</i> , <i>Lesson</i>	XVII.	100	<i>Thompsoni</i> , <i>Pfr.</i>	XXIV.	158
<i>sordidus</i> (<i>Helix</i>), <i>Lesson</i>	LIX.	401	<i>Ticaonicus</i> (<i>Helix</i>), <i>Brod.</i> ...	III.	14
<i>Sowerbyi</i> , <i>Pfr.</i>	LVII.	383	<i>tigris</i> , <i>Brod.</i>	XVIII.	107
<i>spadiceus</i> , <i>Menke</i>	LXXIV.	537	<i>torridus</i> , <i>Gould</i>	LXXXIX.	662
<i>speciosus</i> , <i>Parreyss</i>	L.	327	<i>Tournefortianus</i> , <i>Fér.</i>	LXI.	417
<i>spectatus</i> , <i>Reeve</i>	LXXXI.	601	<i>translucens</i> , <i>Brod.</i>	XIII.	71
<i>spectralis</i> , <i>Reeve</i>	LIII.	348	<i>transparens</i> , <i>Reeve</i>	LXXVII.	566
<i>Spixii</i> , <i>Wagn.</i>	XXX.	182	<i>tribalteatus</i> , <i>Reeve</i>	XLIII.	269
<i>spoliatus</i> , <i>Parreyss</i>	LXVIII.	485	<i>trichodes</i> , <i>D'Orbigny</i>	LXXV.	547
<i>sporadicus</i> , <i>D'Orbigny</i>	XLIX.	325	<i>tricinctus</i> , <i>Reeve</i>	LVII.	380
<i>Sprattii</i> , <i>Pfr.</i>	LIX.	403	<i>tridens</i> , <i>Brug.</i>	LXXXVI.	636
<i>spretus</i> , <i>Reeve</i>	LXXXV.	633	<i>tridentatus</i> , <i>Parreyss</i>	LXVIII.	489
<i>stabilis</i> (<i>Helix</i>), <i>Sow.</i>	XII.	67	<i>trifasciatus</i> (<i>Helix</i>), <i>Chemn.</i> ..	XXXIX.	237
<i>stramineus</i> , <i>Guilding</i>	LXXXV.	632	<i>trilineatus</i> , <i>Quoy</i>	XLVIII.	310
<i>striato-costatus</i> , <i>D'Orbigny</i> ..	LXXX.	594	<i>trilineatus</i> (<i>Helix</i>), <i>Quoy</i>	LIX.	397
<i>striatulus</i> , <i>Sow.</i>	XXII.	143	<i>truncatus</i> , <i>Pfr.</i>	LXX.	498
<i>striatus</i> , <i>King</i>	XXII.	139	<i>tuberculatus</i> , <i>Turton</i>	LXIII.	431
<i>strigatus</i> , <i>Sow.</i>	XLIV.	280	<i>Tuckeri</i> , <i>Pfr.</i>	LXVIII.	481
<i>strigilosus</i> , <i>Duf.</i>	LV.	362	<i>tumefactus</i> , <i>Reeve</i>	LVI.	374
<i>Studeri</i> , <i>Pfr.</i>	LVII.	384	<i>tumidulus</i> , <i>Pfr.</i>	XIX.	111
<i>subcarinatus</i> , <i>Pfr.</i>	VII.	35	<i>Tunetanus</i> , <i>Reeve</i>	LXXIX.	581
<i>subdiaphanus</i> (<i>Pupa</i>), <i>King</i> ..	LXIX.	493	<i>Tupacii</i> , <i>D'Orb.</i>	XV.	86
<i>subsemiclausus</i> , <i>Petit</i>	XLI.	254	<i>turbinatus</i> , <i>Lea</i>	LXXXII.	605
<i>subtilis</i> , <i>Rossmässler</i>	LXVII.	471	<i>turricula</i> , <i>Pfr.</i>	LXIX.	497
<i>subula</i> , <i>Pfr.</i>	LXIX.	494	<i>turiformis</i> , <i>Krauss</i>	LXXXVII.	652
<i>subuliformis</i> (<i>Helix</i>), <i>Moric.</i> ..	LXVIII.	486	<i>turritella</i> , <i>D'Orbigny</i>	LXX.	511
<i>succinctus</i> , <i>Reeve</i>	LXXIV.	534	<i>turritus</i> , <i>Brod.</i>	XX.	124
<i>Succinoides</i> , <i>Petit</i>	XLII.	264	<i>tutulus</i> , <i>Benson</i>	LXXXIV.	625
<i>suffusus</i> , <i>Reeve</i>	LIII.	350	<i>uber</i> , <i>Pfr.</i>	X.	48
<i>sulcosus</i> , <i>Pfr.</i>	XLIX.	324	<i>umbilicaris</i> , <i>Soul.</i>	LXVI.	460
<i>sultanus</i> , <i>Lamarck</i>	XXXI.	187	<i>umbraticus</i> , <i>Reeve</i>	LXVII.	559
<i>superbus</i> , <i>Jonas</i>	XXVIII.	171	<i>undatus</i> , <i>Brug.</i>	XV.	90
<i>Swainsoni</i> , <i>Pfr.</i>	XXXIII.	203	<i>undulatus</i> , <i>Guild</i>	XL.	247
<i>Sylheticus</i> , <i>Reeve</i>	LXXVII.	564	<i>unicarinatus</i> (<i>Pupa</i>), <i>Lam.</i> ..	LXVI.	468
<i>Sylvanus</i> , <i>Brod.</i>	IX.	46	<i>unicolor</i> , <i>Sow.</i>	XXI.	133
<i>sylvaticus</i> , <i>Wagner</i>	LII.	340	<i>unidentatus</i> (<i>Part.</i>), <i>Sow.</i> ...	XXXI.	192
<i>Syriacus</i> , <i>Pfr.</i>	LX.	406	<i>unifasciatus</i> , <i>Sow.</i>	XXIII.	149
<i>tæniolus</i> , <i>Nyst</i>	XLIX.	326	<i>ustulatus</i> , <i>Sow.</i>	XXI.	130
<i>Taunaysii</i> (<i>Helix</i>), <i>Fér.</i>	XXXIII.	202	<i>Valenciennesii</i> , <i>Pfr.</i>	XXXIV.	204
<i>Tauricus</i> , <i>Lang</i>	LXI.	420	<i>variabilis</i> , <i>Hartm.</i>	LXIX.	499
<i>Taylorianus</i> , <i>Reeve</i>	LXXXI.	602	<i>variatus</i> , <i>Webb & Berth.</i>	LXVI.	461
<i>tenebricus</i> , <i>Reeve</i>	LIII.	347	<i>varians</i> , <i>Brod.</i>	XVIII.	104

	Plate.	Species.		Plate.	Species.
<i>variedentatus</i> , Hartman	LXXXVI.	636	<i>vitreus</i> , Spix	XXXVIII.	231
<i>variegatus</i> , Pfr.	XVI.	93	<i>Vitrinoides</i> , Reeve	XLVI.	290
<i>Varnensis</i> , Frivaldsky	LXXV.	543	<i>vittatus</i> , Spix	XLIV.	279
<i>velatus</i> , Brod.	XI.	57	<i>vittatus</i> , Brod.	XVIII.	105
<i>velutinus</i> , Pfr.	LV.	362	<i>Voithianus</i> , Pfr.	XXI.	131
<i>velutino-hispidus</i> , Moric.	XXXII.	199	<i>Wagneri</i> , Pfr.	XXXVIII.	232
<i>Venezuelensis</i> , Nyst.	XXIV.	157	<i>Woodianus</i> , Lea	III.	11
<i>venosus</i> , Reeve	XLV.	285	<i>xantholinus</i> , Ziegler	L.	327
<i>ventricosus</i> , Drap.	LXIX.	499	<i>xanthostoma</i> , Hohen.	LXI.	416
<i>ventrosus</i> (<i>Helix</i>), Fér.	LXIX.	499	<i>xanthostoma</i> , D'Orb.	XLIII.	271
<i>Veranyi</i> , Pfr.	XLII.	262	<i>Yungasensis</i> , D'Orb.	LXV.	456
<i>verecundus</i> , Reeve	II.	62	<i>zebra</i> (<i>Bucc.</i>), Mull.	XV., XXVII.	90
<i>versicolor</i> , Brod.	XIX.	113	<i>zebra</i> , Olivier	LXVI.	464
<i>vexillum</i> , Brod.	XXIII.	152	<i>zebra</i> , Spix	XXXXV.	284
<i>vibex</i> , Hutton	XLVII.	299	<i>zebriolus</i> (<i>Helix</i>), Fér.	LXVI.	464
<i>vimineus</i> (<i>Helix</i>), Mor.	XL.	246	<i>Ziebmanni</i> , Pfr.	LXX.	506
<i>Vincentinus</i> , Pfr.	LV.	366	<i>Ziegleri</i> , Pfr.	LVIII.	389
<i>virens</i> , Pfr.	VII.	32	<i>zigzag</i> , Lam.	XV.	90
<i>virescens</i> , Swainson	XXXI.	187	<i>zonatus</i> , Swain.	XXXIX.	237
<i>virgatus</i> , Spix	XLVIII.	312	<i>zonulatus</i> , Pfr.	XIII.	58
<i>virginus</i> , Brug.	XXXI.	191	<i>zoographicus</i> , D'Orbigny	LXX.	509
<i>virgulatus</i> (<i>Helix</i>), Fér.	XLIX.	320			

E R R A T A.

- Sp. 4. *B. rufogaster*. Add authority, Lesson, Illus. de Zool. pl. 42.
- Sp. 10. *B. mus*. Add authority, Broderip, MS.
- Sp. 15. *B. Mindoroensis*. Add as synonymes, *B. aspersus*, Grateloup, and *B. amoenus*, Pfeiffer.
- Sp. 28. *B. cincinniformis*. Add authority, *Helix cincinniformis*, Sowerby, Pro. Zool. Soc. 1841, p. 17.
- Sp. 53. *B. incomptus*. Having expressed a doubt of this species, it may be as well to add that specimens similar to the original one have been received by Mr. Cuming from the Philippine Islands, and others were collected by Capt. Belcher in the same locality during the voyage of the Samarang.
- Sp. 55. *B. Luzonicus*. Add as synonyme, *B. Costerii*, Eydoux, Mag. de Zool. 1838, Moll. pl. 116.
- Sp. 56. *B. ovoideus*. Add as variety *B. euryzonus*, Pfeiffer.
- Sp. 69. *B. dilatatus*. Insert *Hab.* Island of Luzon, Philippines.
- Sp. 72. *B. evanescens*. Add authority, Broderip, Pro. Zool. Soc. 1841, p. 15.
- Sp. 73. *B. Adamsii*. Dr. Gould informs me that this species is identical with his *B. moniliferus*, from Savoy, Pro. Bost. Soc. Nat. Hist. 1846.
- Sp. 74. For *B. eburneus* read *B. politus*, the name being pre-occupied by Pfeiffer, Sp. 418.
- Sp. 75. *B. erythrostroma*. Add as variety, *B. albus*, Sow., Pro. Zool. Soc. 1833, p. 73; and *B. olarinus*, Duclos, Guerin's Mag. de Zool. 1833, Moll. pl. 24.
- Sp. 82. *B. cochleades*. Add authority, Pfeiffer, Pro. Zool. Soc. 1842, p. 151.
- Sp. 86. *B. Tupacii*. Add as synonyme *B. indutus*, Menke.
- Sp. 98. For *B. culminans* read *B. lithoicus*, D'Orbigny, Voy. dans l'Amér. Mérid. Moll. pl. 33. f. 10, 11.
- Sp. 100. For *B. sordidus*, Lesson, read *B. Proteus*, Broderip, the former species being correctly represented at Fig. 401.
- Sp. 112. *B. elegans*. Add as synonyme *B. Buschii* Pfeiffer.
- Sp. 131. For *B. meridionalis*, Reeve, read *B. Voithianus*, Pfeiffer, Pro. Zool. Soc. 1847, p. 114.
- Sp. 143. For *B. striatulus*, Sow., read *B. Philippii*, Pfeiffer, the first name being pre-occupied by Bruguière in reference to *Buccinum striatulum*, Müller, unidentified. For the true *B. D'Orbignii*, under which name this species was communicated to me, see Sp. 439.
- Sp. 148. For *B. rubescens*, Reeve, read *B. Hennahi*, Gray, for which see Pl. LXXXVIII.
- Sp. 151. *B. derelictus*. Add as synonyme *B. curtus*, Koch, Philippi, Abbild. vol. i. p. 158. *Bul.* pl. 2. f. 8.
- Sp. 152. For *B. vexillum*, Brod., read *B. alternans*, Beck, Pfeiffer, Mon. Helic. vol. ii. p. 207, the former name being pre-occupied by Bruguière and by Wood.
- Sp. 157. *B. pardalis*. Add as synonyme *B. marmoratus*, Philippi, Abbild. vol. i. p. 157. *Bul.* pl. 2. f. 1 and 2, and *B. Venezuelensis* and *Venetiolensis*, Nyst, Bull. de l'Acad. Royale de Bruxelles, vol. xii.
- Sp. 164. *B. auris-Sileni*. Insert *Hab.* Island of St. Vincent, West Indies; Guilding.
- Sp. 165. *B. Adamsoni*. Add authority, Gray, Pro. Zool. Soc. 1833, p. 123.
- Sp. 170. For *B. auris-Midæ*, read *B. fibratus*, Martyn, Univ. Conch. pl. 25, published anterior to Chemnitz's *Auris Midæ*.
- Sp. 182. *B. Spixii*. Add as synonyme *B. bifasciatus*, Philippi. The fold represented upon the columella in this figure is merely casual.
- Sp. 187. *B. citrinus*. Add as synonymes *B. inversus* and *interruptus*, Bruguière, *B. sultanus*, Lamarck, *B. aureus* and *virescens*, Swainson, *B. palaceus*, Busch, and *B. purus*, Mousson.
- Sp. 189. For *B. Lindeni*, Reeve, read *B. astrapoides*, Jonas, Philippi, Abbild. vol. i. p. 157. *Bul.* pl. 2. f. 3 and 4, quoted erroneously by Dr. Pfeiffer, as a variety of *B. pardalis*.
- Sp. 199. *B. heterotrichus*. Add as varieties *B. velutino-hispidus*, Moricand, and *B. scobinatus*, Wood.
- Sp. 203. *B. melanostoma*. Add as synonymes *B. Swainsoni*, Pfeiffer, and *B. Illheocola*, Moricand.
- Sp. 204. For *B. Popelairianus*, Nyst, read *B. Valenciennesii*, Pfeiffer, which has priority, and include the former name as synonyme.

- Sp. 211. For *B. focillatus*, Reeve, read *B. Lattrei*, Pfeiffer, Philippi, Abbild. vol. ii. p. 112. *Bul.* pl. 4. f. 11, which name has priority.
- Sp. 212. *B. ovatus*. Add as varieties *B. Bronni*, Pfeiffer, and *B. auritus*, Sowerby.
- Sp. 216. *B. lævus*. Add as synonymes *B. elegans*, *furcillatus*, and *porcellanus*, Mousson.
- Sp. 217. *B. lactarius*. Add as synonyme *B. Galeotti*, Nyst.
- Sp. 220. For *B. contusus*, Reeve, read *B. Jayanus*, Lea, Pro. Am. Phil. Soc. 1841.
- Sp. 241. For *B. fulvicans* read *B. pulverulentus*, Pfeiffer, Symbolæ, vol. i. p. 42.
- Sp. 257. *B. Lyonnetianus*. Add as synonymes *Gibbus Lyonnetii*, De Montfort; *Gibbus Lyonnetianus*, Pfeiffer, and *Pupa Lyonnetiana*, De Blainville, to which genus it should perhaps be referred.
- Sp. 290. For *B. Vitrinoides*, Reeve, read *B. citrino-vitreus*, Moricand, Mém. Gén. vol. vii. part 2, p. 436. pl. 2. f. 19.
- Sp. 307. For *B. constrictus*, Pfr., read *B. redditus*, Reeve. Dr. Pfeiffer's *B. constrictus* is correctly represented at Sp. 402.
- Sp. 308. *B. digitale*. Add *Hab.* St. Helena.
- Sp. 324. For *B. hyematus*, Reeve, read *B. sulcosus*, Pfeiffer, Philippi, Abbild. vol. i. p. 56. *Bul.* pl. 1. f. 9.
- Sp. 346. For *B. consimilis*, Reeve, read *B. Largilliertii*, Philippi, Abbild. und Besch. Conch. vol. ii. p. 11. *Bul.* pl. 3. f. 6.
- Sp. 354. For *B. feriatus* read *B. demotus*, the name being already occupied for Sp. 314.
- Sp. 367. *B. interstinctus*. Add authority, Gould, Pro. Bost. Soc. Nat. Hist. 1843.
- Sp. 376. For *B. oblitus*, Reeve, read *B. neglectus*, Pfeiffer, Zeitschr. für Malak. p. 67.
- Sp. 388. *B. connivens*. Add authority, Pfeiffer, Zeitschr. für Malak. 1847, p. 148.
- Sp. 417. *B. Tournefortianus*. Mr. W. J. Hamilton has favoured me with a variety of this species, striped obliquely with dark bands, collected during his travels in Asia Minor, at Pontus, between Sinope and Boiavad, where they hang suspended from the shrubs like fruit.
- Sp. 421. For *B. cylindricus* read *B. cymatilis*, and add the former name as synonyme to the preceding species. For *B. cylindricus* see Sp. 444.
- Sp. 480. *B. oryza*. Add as synonyme *B. Beckianus*, Pfr.
- Sp. 492. *B. cænopictus*. To the remark that this species is unlike *B. folliculus*, may be added the following observations from Mr. Benson.—“*B. folliculus*, being a *Carychium*, has a different animal, and inhabits the Himalaya at an elevation of from 5,000 to 10,000 feet. *B. cænopictus*, on the other hand, a true *Bulimus*, does not reach the Himalaya range, but is confined to the plains and low hills on the right bank of the Jumna.”
- Sp. 498. *B. truncatus*. The figure of this species is inadvertently numbered 503 in the plate.
- Sp. 499. *B. ventrosus*. Insert *Hab.* South of Europe.
- Sp. 550. *B. neuricus*. Add as synonyme *B. infrafasciatus*, Gould.
- Sp. 579. *B. micra*. Inadvertently repeated, a more highly magnified figure having been already given at Pl. XIV. Sp. 78.
- Sp. 583. *B. obtusus*. *Hab.*, for *Australia*, read *Austria*.
- Sp. 592. *B. decorticatus*. Add as synonyme *Achatina erecta*, Benson, Ann. and Mag. Nat. Hist. 1842.
- Sp. 596. *B. harpa*. Add authority, *Helix harpa*, Say, App. Major Long's Expedition to St. Peter's; and *Hab.* N. W. Territory, United States.
- Sp. 600. *B. patricius*. This fine species is identical with that described and figured at Pl. LXXIV. Sp. 532, in a young state, under the name *B. lilacinus*, which has priority.
- Sp. 614. Obs. For *B. rubricatus* read *B. Hamiltoni*.

MONOGRAPH
OF THE GENUS
ACHATINA.

“Each shell, each crawling insect, holds a rank
Important in the scale of Him who framed
This scale of beings; holds a rank, which lost,
Would break the chain, and leave a gap behind,
Which Nature’s self would rue!”—*Stillingfleet*.

MONOGRAPH

OF THE GENUS

ACHATINA.

"Treat shell, with crawling feet, toils a race
Important to the race of him who traces
The path of nature, toils a race, which but
Would break the chain, and force a gap behind
Which Nature's will would see."—Hutchinson.

Achatina, Pl. I.



ACHATINA.

PLATE I.

Genus ACHATINA, Lamarck.

Testa ovata vel fusiformi-oblonga, anfractibus plerumque striatis vel granatis, columellâ involutâ, basi peculiariter truncatâ, aperturæ labro simplici, nunquam incrassato aut reflexo. Operculum nullum.

Shell ovate or fusiformly oblong, whorls mostly striated or grained, columella rolled inwards, peculiarly truncated at the base, lip of the aperture simple, never thickened or reflected. No operculum.

The general aspect of the *Achatina* is very similar to that of *Bulimus*, but the particulars of the shell in detail present a sufficient typical difference throughout. The chief peculiarity of structure which characterises this genus resides in the columella, it being always involuted towards the aperture, and more or less abruptly truncated at the base. A negative character is also afforded in the outer lip being never thickened or reflected. The *Achatina* are not of the same arboreal habits as the *Bulimi*, but dwell in places where there is more moisture, in swamps or in the vicinity of lakes and rivers; and are more confined to particular localities. They comprehend three very distinct groups, one consisting of large, richly coloured, ventricose species, chiefly inhabiting West Africa, where they may be said to take the place of the *Bulimi*, another comprising numerous delicate species, some of a semi-transparent, glassy polish, others finely sculptured with granulated or raised striæ, inhabiting Central America, the West Indies, and Southern Europe, and constituting the genus *Glandina* of authors. The prettily painted and porcelain-like species *A. virginea* and *vexillum*, are also representatives of another type, the genus *Lignus* of De Montford.

Species 1. (Mus. Cuming.)

ACHATINA PFEIFFERI. *Achat. testâ oblongo-turritâ, anfractibus octo, convexis, longitudinaliter obscure plicato-striatis, apicem versus subtiliter decussatâ, ad suturas indistinctè crenulatis, columellâ valdè arcuatâ et contortâ, abruptè truncatâ; fulvescente-albâ, rufo-fusco, præcipuè basin versus, flammâtâ.*

PFEIFFER'S ACHATINA. Shell oblong-turreted, whorls eight in number, convex, longitudinally obscurely plicately striated, finely decussated towards the apex, indistinctly crenulated at the sutures, columella much arched and twisted, abruptly truncated; pale fulvous

white, flamed especially towards the base with reddish-brown.

DUNKER, Zeitschr. für Malac. 1845. p. 163.

Hab. Near Loanda, West Africa (on sandy mountains).

As in most species of the genus the colouring is darker and more thickly displayed towards the base.

Species 2. (Mus. Cuming.)

ACHATINA ÆQUATORIA. *Achat. testâ acuminato-oblongâ, anfractibus septem, tumidis, rotundatis, lævibus, obliquè tenuistriatis, ad suturas lirâ parvâ spirali crenulatâ cinctis, columellâ vix truncatâ, labro simplici; cinereo-cærulescente, apicem versus albicante, strigis maculisque fuscis irregulariter aspersâ.*

THE EQUATORIAL ACHATINA. Shell acuminately oblong, whorls seven in number, swollen, rounded, smooth, obliquely finely striated, encircled with a small spiral crenulated ridge at the sutures, columella scarcely truncated, lip simple; ash-blue, whitish towards the apex, sprinkled irregularly with brown streaks and spots.

Hab. Banks of the river Gaboon, West Africa.

The marking of this species, from a locality nearly on the equator, is very peculiar, not disposed in regular stripes, but wavy and scattered; the whorls are more than usually rounded, and the apex has a papillary aspect.

Species 3. (Mus. Cuming.)

ACHATINA VARIEGATA. *Achat. testâ conico-oblongâ, basin versus ventricosâ, anfractibus septem ad octo, plus minus subtiliter decussatis, ad suturas crenulatis, lineâ impressâ marginatis, columellâ contortâ, obliquè truncatâ, labro simplici; fulvo-albidâ, strigis nigro-castaneis undatis, hic illic fulguratis, sæpissimè pictâ, columellâ vividè roseâ.*

THE VARIEGATED ACHATINA. Shell conically oblong, ventricose towards the base, whorls seven to eight in number, more or less finely decussated, crenulated at the sutures, margined with an impressed line, columella twisted, obliquely truncated, lip simple; fulvous-white, most frequently painted with dark waved chesnut streaks here and there zig-zag, columella very deep rose.

Roissy, Buffon de Sonnini, Hist. Moll. p. 354.

Bulla achatina, Linnæus.

Buccinum achatinum, Muller.

Buccinum variegatum, Fabius Columna.

Bulimus achatinus, Bruguière.

Cochlitoma achatina, Férussac.

Achatina perdis, Lamarek.

Hab. Sierra Leone &c., West Africa (in the woods).

This fine large species exists in great abundance in the woods of West Africa, with little variation except that the striped painting is sometimes absent, as in Pl. V.

Species 4. (Mus. Cuming.)

ACHATINA BICOLOR. *Achat. testâ subelongato-turritâ, anfractibus septem, subirregulariter striatis, ad suturas indistinctè plicato-crenulatis, columellâ arcuatâ et contortâ, fortiter truncatâ, aperturâ parvâ; intensè purpureo-nigrâ, apicem versus castaneâ, columellâ cærulescente-albâ.*

THE TWO-COLOURED ACHATINA. Shell somewhat elongately turreted, whorls seven in number, rather irregularly striated, indistinctly plicately crenulated at the sutures, columella arched and twisted, strongly truncated, aperture small; intense purple-black, chesnut towards the apex, columella bluish-white.

JAY, Cat. Mus. p. 119.

Achatinella bicolor, Pfeiffer.

Achatina adusta, Gould (fide Pfeiffer).

Hab. Sandwich Islands.

This shell has not the generic character of *Achatinella*, the species of which are more or less polished, and distinguished by a peculiar screw-like twist of the columella.

Species 5. (Mus. Cuming.)

ACHATINA COCHLEA. *Achat. testâ elongato-turritâ, anfractibus octo, spiraliter costatis, supernè depressis, infra convexo-planis, basi subangulatis, columellâ profundè arcuatâ et contortâ; ustulato-castaneâ, zonulâ albâ infra suturas.*

THE SCREW ACHATINA. Shell elongately turreted, whorls eight in number, spirally ribbed, depressed round the upper part, convexly flattened beneath, slightly angled at the base, columella deeply arched and twisted; burnt chesnut colour, with a narrow white zone beneath the sutures.

Hab. Peru.

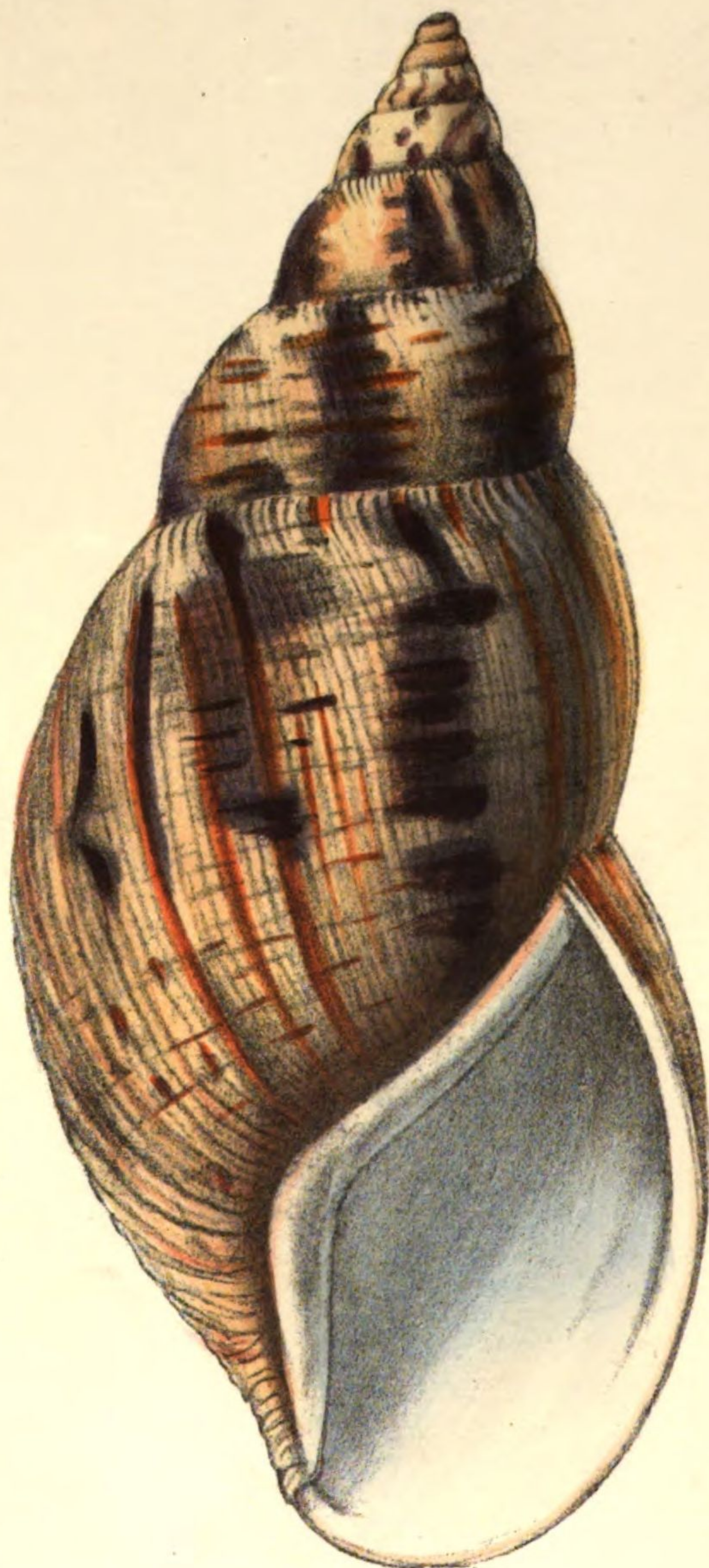
This species is chiefly remarkable on account of its elongated form and spiral ribbed structure, having much the aspect of a *Turritella*.



6



7



9



8

ACHATINA.

PLATE II.

Species 6. (Mus. Cuming.)

ACHATINA PAPYRACEA. *Achat. testâ oblongo-ovatâ, tenui, anfractibus sex, minutè decussatim granulatis, ad suturas marginatis, columellâ leviter contortâ, parum truncatâ; fuscescente, fusco nebulatâ, columellâ interdum sub-rosaceâ.*

THE PAPER ACHATINA. Shell oblong-ovate, thin, whorls six in number, minutely decussately granulated, margined at the sutures, columella slightly twisted, but little truncated; light brown, clouded with darker brown, columella sometimes pinkish.

PFEIFFER, Pro. Zool. Soc. 1845, p. 74.

Hab. Banks of the river Nun, Africa.

A light semi-transparent shell, of which the interior is slightly iridescent.

Species 7. (Mus. Cuming.)

ACHATINA BALTEATA. *Achat. testâ acuminato-oblongâ, subfusiformi, crassiusculâ, anfractibus octo ad novem, subplicato-striatis, undique creberrimè minutè granulatis, columellâ peculiariter arcuatâ, et contortâ, abruptè truncatâ; flavescente, fasciis castaneis longitudinalibus apicem versus tinctâ, fasciâ spirali interruptâ, subindistinctâ, medio cingulatis, columellâ et aperturae fauce cærulescente-albâ.*

THE BELTED ACHATINA. Shell acuminate oblong, somewhat fusiform, rather thick, whorls eight to nine in number, slightly plicately striated, very closely minutely granulated, columella peculiarly arched and twisted, abruptly truncated; yellowish, stained towards the apex with chesnut longitudinal bands, and encircled round the middle with a rather indistinct interrupted spiral band, columella and interior of the aperture bluish-white.

Hab. Banks of the river Gambia, Africa.

Very beautifully minutely granulated throughout, and characterized by a faint spiral band, in a manner which obtains some specific importance on account of its singularity.

Species 8. (Mus. Cuming.)

ACHATINA FULICA. *Achat. testâ fusiformi-oblongâ, subventricosâ, nunc tenui, nunc crassiusculâ, anfractibus*

octo, lævibus, apicem versus obscure granulato-striatis, ad suturas vix crenulatis, columellâ subcontortâ, angustè truncatâ; lutescente-albâ, fusco profusè latistri-gatâ et nebulatâ, columellâ et aperturae fauce albis.

THE SMOKED ACHATINA. Shell fusiformly oblong, rather ventricose, sometimes thin, sometimes thick, whorls eight in number, smooth, obscurely granosely striated towards the apex, but slightly crenulated at the sutures, columella rather twisted, narrowly truncated; yellowish-white, profusely broadly streaked and clouded with brown, columella and interior of the aperture bluish-white.

DE FERUSSAC, Hist. Moll. pl. 124 A. f. 1.

Eadem varietates.

Helix borbonica, De Férussac.

Helix zebrina, De Férussac.

Helix Mauritiana, Quoy and Gaimard.

Achatina Couroupa, Lesson.

Hab. Mauritius.

An extremely variable species; in addition to the typical specimen here figured it has been necessary to represent (Pl. III.) a variety of smaller size which is of frequent occurrence, and one (Pl. XI.) of singular umbilicated growth. The variety Fig. 8, *b.* is of rather light structure, and extremely constant in this peculiarity. MM. Quoy and Gaimard distinguished it as a separate species with the name *B. Mauritiana*, but it is found associated with the larger kind and differs immaterially in form or sculpture. This variety is, however, a very characteristic one, and is found abundantly in some parts of Mauritius. When the Samarang touched at that island on its return to England, Sir David Barclay, an eminent collector residing at Port Louis, presented Sir Edward Belcher with some thirty or forty of them alive from his garden, scarcely differing from one another in size or painting.

In the variety figured at Pl. XI, a very remarkable one, the shell is pressed down, as it were, and the whorls are turned in a manner to form a large umbilicus. Specimens of this variety are not very uncommon, and may be seen in different stages of growth.

Species 9. (Mus. Cuming.)

ACHATINA RETICULATA. *Achat. testâ elongato-ovatâ, subfusiformi, crassâ, anfractibus novem, plicato-rugosis, et striatis, ad suturas concentricè crenatis, columellâ*

ACHATINA.—PLATE II.

callosá, subangustè truncatá; niveá, purpureo-castaneo variegatá, columellá et aperturæ fauce niveis.

THE RETICULATED ACHATINA. Shell elongately ovate, somewhat fusiform, thick, whorls nine in number, plicately wrinkled and striated, concentrically crenated at the sutures, columella callous, rather narrowly truncated; snowy-white, variegated with purple-chesnut, columella and interior of the aperture snowy-white.

PFEIFFER, Pro. Zool. Soc. 1845. p. 74.
Hab. Africa.

This fine species is remarkably distinct from any other, unless a comparison be made with the *A. lactea*, which is smaller and unspotted.



ACHATINA.

PLATE III.

Species 10. (Mus. Cuming.)

ACHATINA FULVA. *Achat. testā sub-acuminato-oblongā, solidiusculā, anfractibus octo ad novem, convexis, irregulariter striatis, apicem versus minutè decussatis, ad suturas rudè crenatis, columellā profundè arcuatā, subabruptè truncatā; griseo-albā, castaneo-fusco intensè nebulato-strigatā, columellā et aperturæ fauce cæruleo-albicantibus.*

THE FULVOUS ACHATINA. Shell acuminate oblong, rather solid, whorls eight to nine in number, convex, irregularly striated, minutely decussated towards the apex, rudely crenated at the sutures, columella deeply arched, not very abruptly truncated; greyish white, deeply striped in a clouded manner with chesnut brown, columella and interior of the aperture bluish-white.

DESHAYES, Anim. sans vert. vol. viii. p. 309.

Bulinus fulvus, Bruguière.

Hab. East Africa.

The columella of this species is remarkable for its deeply arched curve.

Species 11. (Mus. Cuming.)

ACHATINA ACUTA. *Achat. testā subfusiformi-oblongā, solidiusculā, anfractibus octo ad novem, apicem versus minutè decussatis, ad suturas subdistinctè crenulatis, columellā arcuatā et contortā, elongato-productā, vix truncatā; albidā, fusco profusè nebulatā et strigatā, columellā et aperturæ fauce cærulescente-albis.*

THE SHARP ACHATINA. Shell somewhat fusiformly-oblong, rather solid, whorls eight to nine in number, minutely decussated towards the apex, rather indis-

tinctly crenulated at the sutures, columella arched and twisted, elongately produced, but slightly truncated; whitish, profusely clouded and streaked with brown, columella and interior of the aperture bluish-white.

FERUSSAC, Hist. Moll. pl. 124. A. f. 2.

Hab. Mauritius.

This species is mainly distinguished from the preceding by its more elongated fusiform growth, by which the columella is more produced and less truncated.

Species 12. (Mus. Cuming.)

ACHATINA PANTHERA. *Achat. testā conico-oblongā, ventricosā, anfractibus octo, supernè plano-declivibus, medio tumidis, longitudinaliter plicato-striatis, ad suturas rudè crenulatis, apicem versus minutè decussatis; columellā contortā, abruptè truncatā; albidā, maculis strigisque fuscis cæruleo-nebulatis pictā, columellā intensè purpureo-roseā.*

THE PANTHER ACHATINA. Shell conically oblong, ventricose, whorls eight in number, flatly slanting round the upper part, swollen in the middle, longitudinally plicately striated, rudely crenulated at the sutures, minutely decussated towards the apex, columella twisted, abruptly truncated; whitish, painted with blue-clouded spots and streaks, columella deep purple-rose.

FERUSSAC, Prod. p. 49. Hist. Moll. pl. 126.

Achatina Lamarckiana, Pfeiffer.

Hab. Interior of Madagascar.

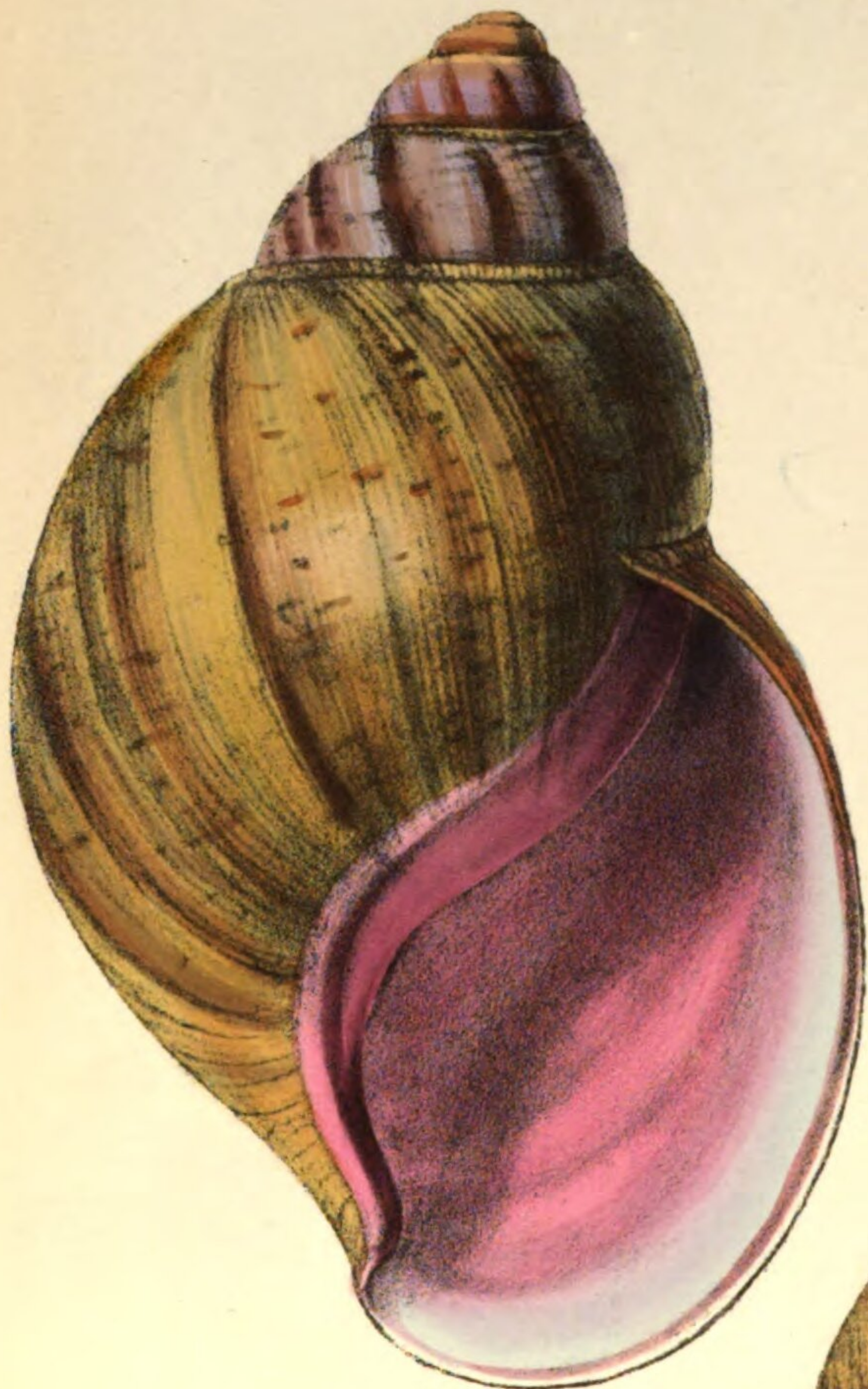
A beautifully painted species from a locality in which many fine *Colimacea* doubtless remain to be discovered.



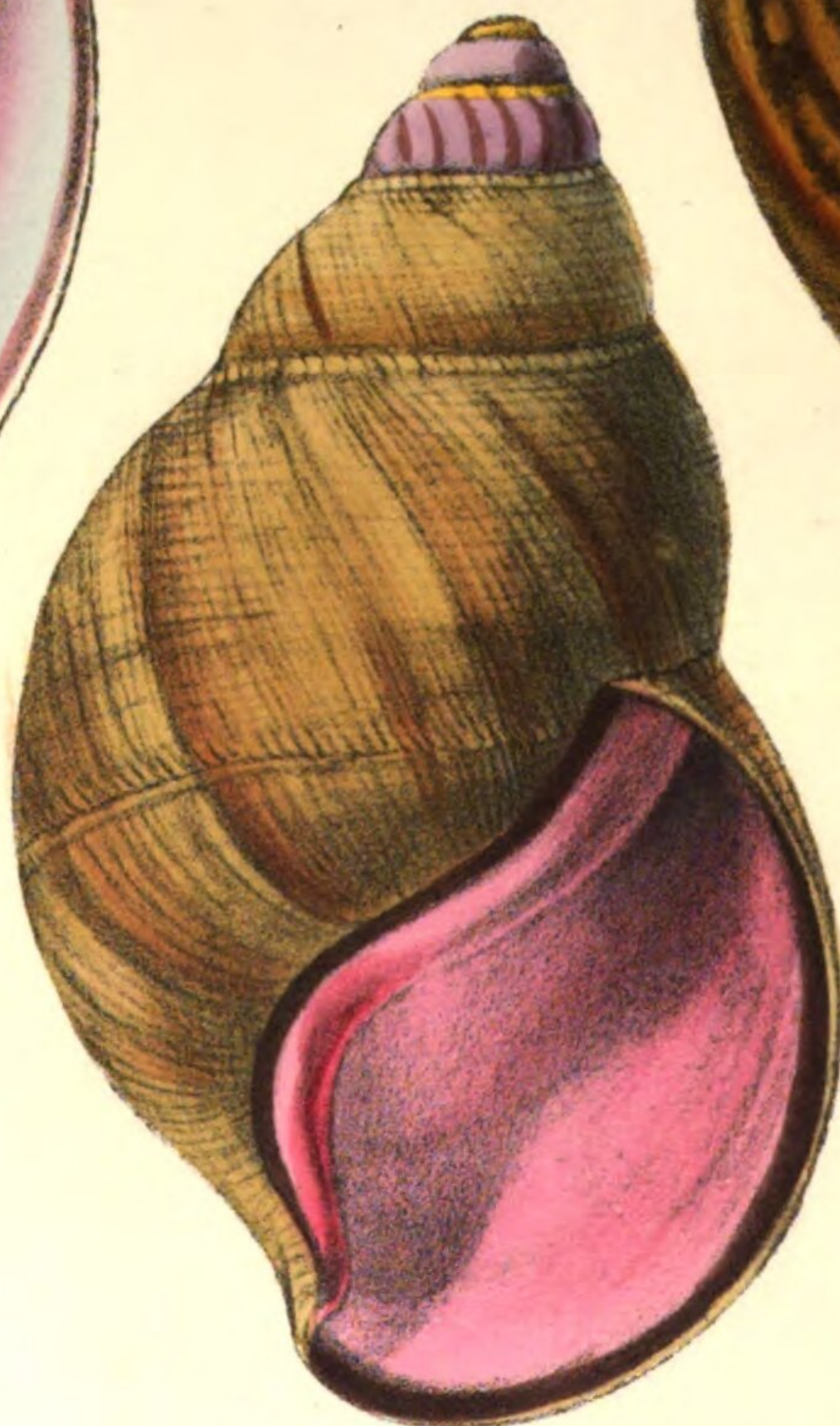
13.



14.



15. a.



15. b.

ACHATINA.

PLATE IV.

Species 13. (Mus. Cuming.)

ACHATINA PRUNUM. *Achat. testā ovatā, tenui, ventricosculā, spirā apicem versus obtusā, anfractibus quinque, infra suturas appressis, læviusculis, apicem versus minutissimè decussatis, columellā arcuatā, vix truncatā; aureo-lutescente, castaneo latistrigatā, supernè purpureo-roseā.*

THE PLUM ACHATINA. Shell ovate, thin, rather ventricose, obtuse towards the apex, whorls five in number, appressed beneath the sutures, somewhat smooth, very minutely decussated towards the apex, columella arched, but slightly truncated; pale golden-yellow, broadly streaked with chesnut, purple-rose towards the upper part.

Hab. West Africa.

A striking species, distinguished by its obtuse growth and peculiar colouring. The last whorl is of a delicate golden-yellow, marked with dark chesnut streaks converging together at the base, whilst the upper whorls are of a purple-rose, indistinctly spotted at the sutures.

This species may possibly have been taken for the young of *A. marginata*, but it is certainly distinct.

Species 14. (Mus. Dennison.)

ACHATINA MARGINATA. *Achat. testā conico-ovatā, ventricosā, anfractibus sex ad septem, lævibus, apicem versus minutissimè decussatis, infra suturas peculiariter marginatis, columellā subprofundè arcuatā et contortā, lutescente, nigricante-castaneo profusè undulatā et strigatā, apice intensè roseo, columellā nunc albā, nunc roseā, aperturæ fauce cærulescente-albā.*

THE MARGINED ACHATINA. Shell conically ovate, ventricose, whorls six to seven in number, smooth, very minutely decussated towards the apex, peculiarly margined beneath the sutures, columella rather deeply

arched and twisted; yellowish, profusely waved and streaked with blackish chesnut, apex deep rose, columella sometimes white, sometimes rose, interior of the aperture bluish-white.

SWAINSON, Zool. Illus. pl. 30.

Achatina amphora, Jay.

Hab. West Africa.

Mostly very richly marked externally, but not coloured in the aperture as in the species which follows.

Species 15. (Fig. a, Mus. Cuming; Fig. b, Mus. Dennison.)

ACHATINA PURPUREA. *Achat. testā ovatā, solidiusculā, anfractibus sex, convexis, infra suturas marginatis et eximè crenulatis, longitudinaliter striatis, apicem versus decussatis, columellā subprofundè arcuatā et contortā; cærulescente-olivaceā, pallidè fusco rarè strigatā, apice rosaceo, columellā et aperturæ fauce intensè roseis, interdum nigro-purpureo marginatis.*

THE PURPLE ACHATINA. Shell ovate, rather solid, whorls six in number, convex, margined and delicately crenulated beneath the sutures, longitudinally striated, decussated towards the apex, columella somewhat deeply arched and twisted; bluish-olive, faintly streaked at distant intervals with pale brown, pink at the apex, columella and interior of the aperture deep rose, sometimes edged with black-purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 296.

Bulla purpurea, Chemnitz.

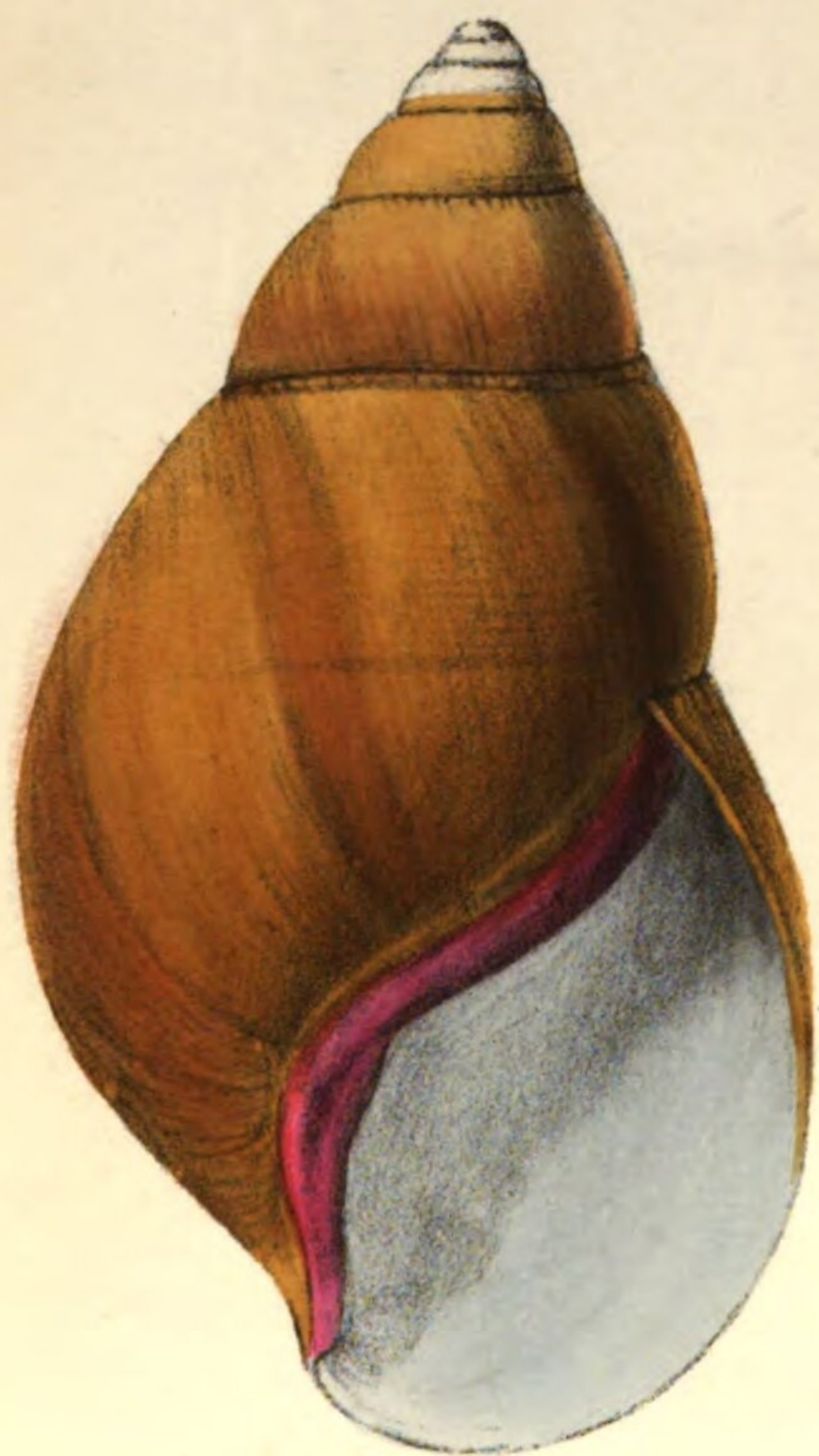
Bulimus purpurascens, Bruguière.

Hab. Cape Palmas, West Africa.

This species may generally be recognised by the deep rose colouring of the aperture and columella, which, as in the beautiful specimen figured from Mr. Dennison's collection, is sometimes edged with very dark purple, approaching to black.



3. b.



3. c.



17.



16.

ACHATINA.

PLATE V.

Species 16. (Mus. Cuming.)

ACHATINA ALLISA. *Achat. testâ elongato-oblongâ, subcylindraceâ, anfractibus septem, obliquè subtiliter granato-striatis, infra suturas tenuè crenulatis, aperturâ parviusculâ; columellâ arcuatâ, subcontortâ, abruptè truncatâ; olivaceo-lutescente, maculis rufo-castaneis oblongis hic illic irregulariter inquinatâ.*

THE BRUISED ACHATINA. Shell elongately oblong, somewhat cylindrical, whorls seven in number, obliquely finely granosely striated, finely crenulated beneath the sutures, aperture rather small; columella arched, slightly twisted, abruptly truncated; olive-yellow, here and there irregularly bedaubed with reddish chesnut blotches.

Hab. Cape Palmas, West Africa.

This species may be readily distinguished from any of those hitherto described, by its oblong cylindrical form and peculiar style of irregular blotching. The aperture is proportionably smaller and narrower than in the allied species.

Species 17. (Mus. Cuming.)

ACHATINA BICARINATA. *Achat. testâ oblongo-ovatâ, cras-*

siusculâ, anfractibus sex ad septem, concentricè plicato-striatis, ultimo inferne obscure bicarinato; columellâ subarcuatâ, fortiter truncatâ; intensè purpureâ, apice albicante, fusco obscure fulguratâ, aperturâ fauce cærulescente-albâ.

THE TWO-KEELED ACHATINA. Shell oblong-ovate, rather thick, whorls six to seven in number, concentrically plicately striated, last whorl obscurely two-keeled towards the lower part, columella arched, strongly truncated; deep purple, whitish towards the apex, marked with obscure brown waves, interior of the aperture bluish-white.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. viii. p. 296.

Bulla bicarinata, Dillwyn.

Bulimus bicarinatus, Bruguière.

Cochlitoma bicarinata, Férussac.

Bulla achatina sinistrorsa maxima, Chemnitz.

Achatina sinistrorsa, Pfeiffer.

Hab. Prince's Islands, West Africa.

The keeled growth of this shell is very obscure and not always perceptible. The name *sinistrorsa* was not given to the species by Chemnitz as a technical specific appellation; it merely formed part of his diagnose.

ACHATINA

THE

GENUS

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ACHATINA.

PLATE VI.

Species 18. (Mus. Cuming.)

ACHATINA INDOTATA. *Achat. testâ oblongo-ovatâ, tenui, ventricosâ, anfractibus septem, infernè lævibus, supernè granoso-striatis, columellâ arcuatâ; lutescente-albâ, strigis latis castaneis fulguratis.*

THE UNENDOWED ACHATINA. Shell oblong-ovate, thin, ventricose, whorls seven in number, smooth round the lower part, granosely striated round the upper part, columella arched; yellowish-white, marked with broad zigzag chesnut-brown streaks.

Hab. West Africa.

This shell, of which I have examined many specimens, is frequently confounded with *A. zebra*, from which it differs constantly in its proportions and the contour of the columella. The painting, though it assimilates in a remarkable degree with some varieties of *A. zebra*, has nevertheless a peculiarity of character about it.

Species 19. (Mus. Cuming.)

ACHATINA STRIATA. *Achat. testâ fusiformi-oblongâ, anfractibus octo, longitudinaliter conspicuè plicato-striatis, ad suturas crenulatis, columellâ contortâ, subelongato-productâ, aperturâ parviusculâ, angustâ; opaco-albâ.*

THE STRIATED ACHATINA. Shell fusiformly oblong, whorls eight in number, longitudinally conspicuously plicately striated, crenulated at the sutures, columella twisted, somewhat elongately produced, aperture rather small, narrow; opaque white.

Buccinum striatum, Müller, Verm. p. 149.

Chemnitz, Conch. Cab. vol. ix. p. 36. pl. 120. f. 1028-9.

Hab. Mexico.

M. Deshayes assigns the *A. rosea*, De Férussac, and Dr. Pfeiffer the *A. Mulleri* of the same author, to the old *Buccinum striatum* of Müller; the species under consideration seems, however, to agree far better both with Müller's description and Chemnitz's figures, excluding f. 1030, which is *A. Mulleri*.

It is a shell of rather solid growth, opaque snowy white, with the striæ raised in prominent longitudinal folds.

Species 20. (Mus. Cuming.)

ACHATINA ORNATA. *Achat. testâ subfusiformi-oblongâ, ventricosiusculâ, anfractibus octo, longitudinaliter creberrimè elevato-striatis, ad suturas angustè marginatis, columellâ breviusculâ, abruptè truncatâ, aperturâ parvâ, oblongâ; fulvescente, strigis brevibus fuscis irregularibus infra suturas obscure notatâ.*

THE ADORNED ACHATINA. Shell somewhat fusiformly oblong, rather ventricose, whorls eight in number, longitudinally very closely elevately striated, narrowly marginated at the sutures, columella rather short, abruptly truncated, aperture small, oblong; light fulvous-brown, obscurely marked beneath the sutures with short, irregular, brown streaks.

PFEIFFER, Zietschr. fur. Malac. 1846. p. 117.

Achatina costulata, Pfeiffer (not of Adams).

Hab. New Granada.

Curiously, but obscurely, marked with short scattered streaks striking out of the sutures.

Species 21. (Mus. Benson.)

ACHATINA KRAUSSI. *Achat. testâ oblongo-ovatâ, anfractibus septem, parum striatis aut decussatis, columellâ arcuatâ et contortâ; nigricastaneâ, strigis angustis albidis remotè fulguratis, columellâ et aperturæ fauce cæruleo-albis.*

KRAUSS'S ACHATINA. Shell oblong-ovate, whorls seven in number, but little striated or decussated, columella arched and twisted; blackish-chesnut, marked with distant narrow white zigzag streaks, columella and interior of the aperture bluish-white.

REEVE, Pro. Zool. Soc., 1842, p. 55. Conch. Syst. vol. ii. pl. 179. f. 19.

Hab. Port Natal, Coast of Africa.

Named in honour of Dr. Krauss of Stutgard, whose researches in South Africa have been productive of a valuable work on the Mollusca of that district.



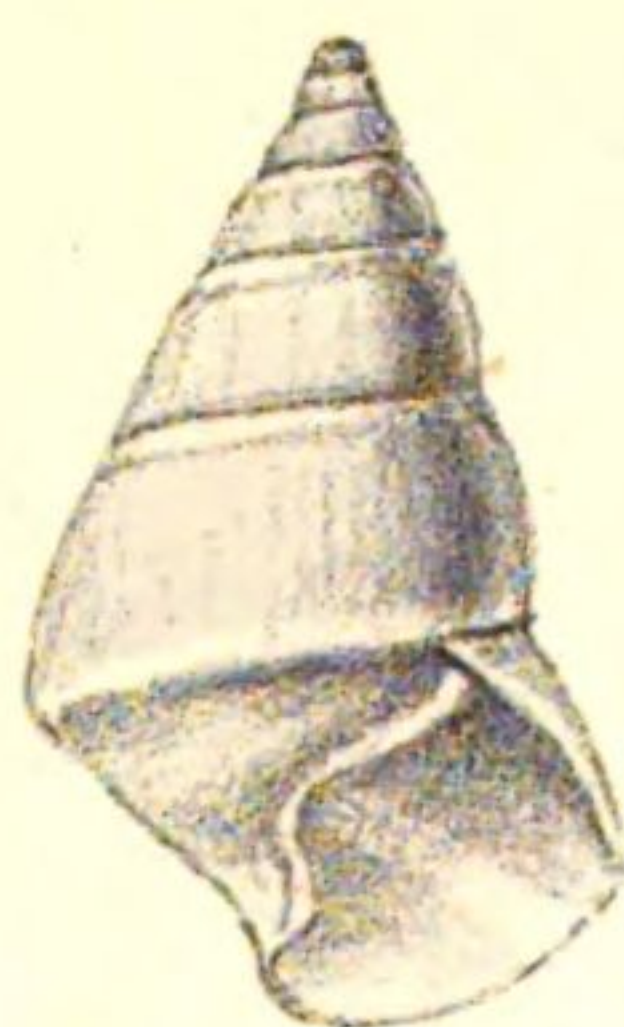
22a.



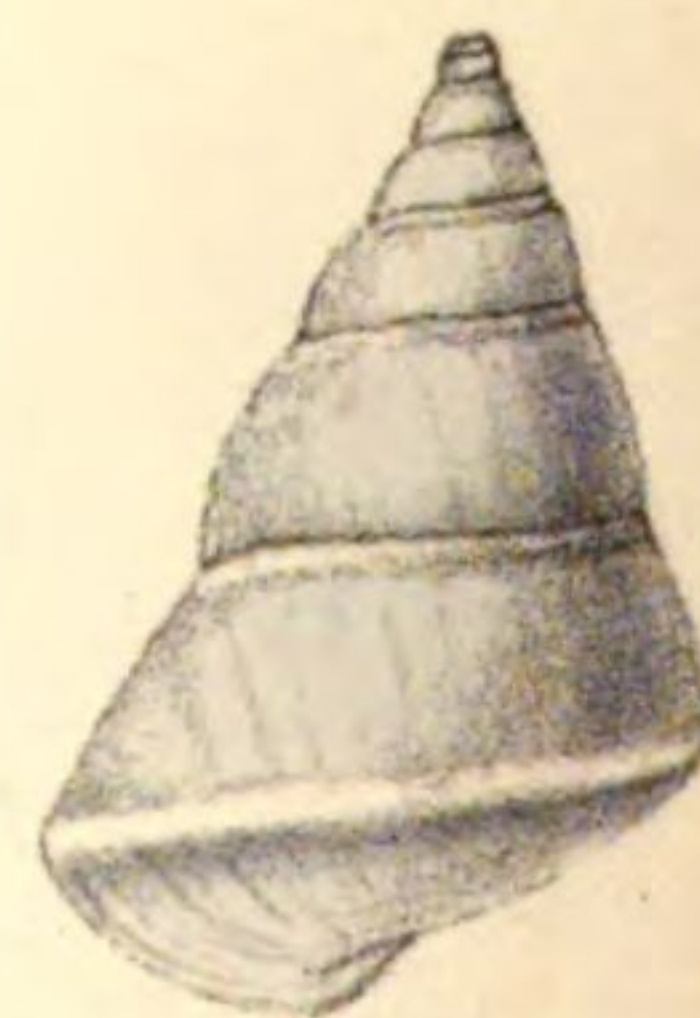
22b.



23.



24a.



24b.

ACHATINA.

PLATE VII.

Species 22. (Fig. *a* and *b*, Mus. Cuming.)

ACHATINA MURREA. *Achat. testā pyramidalī-conicā, apice tumidā, basi subplanatā et angulatā, anfractibus sex, lævibus, politis, ad suturas minutissimè marginatis, columellā vix truncatā; pallidè luteā, maculis cæruleo-viridibus oblongo-quadratis undatis pulcherrimè tessellatā, interdum vividè luteā, immaculatā, apice roseo-incarnatā.*

THE PORCELAIN ACHATINA. Shell pyramidally conical, swollen at the apex, somewhat flattened and angular at the base, whorls six in number, smooth, polished, very minutely marginated at the sutures, columella slightly truncated; pale yellow, very prettily tessellated with waved oblong-square blue-green spots, sometimes bright yellow, unspotted, tinged with flesh-pink at the apex.

Hab. — ?

A pretty species, clearly distinct from the *A. fasciata*.

Species 23. (Mus. Cuming.)

ACHATINA ZEBRA. *Achat. testā subelongato-oblongā, crassiusculā, anfractibus octo, granoso-striatis, granis in anfractu ultimo evanidis, columellā subcontortā; intensè castaneā, strigis angustis albis crebrè fulguratā, aperturæ fauce cærulescente-albā.*

THE ZEBRA ACHATINA. Shell elongately oblong, rather thick, whorls eight in number, granosely striated, grains disappearing on the last whorl, columella slightly twisted; very dark chesnut, marked with close narrow zigzag white streaks, interior of the aperture bluish-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 295.

Buccinum achatina, pars, Muller.

Bulla zebra, Chemnitz.

Bulimus zebra, Bruguière.

Cochlitoma zebra, Férussac.

Hab. Caffraria, South Africa.

It is curious to observe in this species, that the longitudinal streaks become gradually narrower and more frequent as the shell increases in growth. For a species commonly placed with this in collections, in which the stripes are broader and much fewer in number, and which differs manifestly in form, see the preceding Plate, Sp. 18.

Species 24. (Mus. Cuming.)

ACHATINA CARINATA. *Achat. testā pyramidalī-conicā, basi plano-angulatā, anfractibus sex ad septem, plano-convexis, sub lente minutissimè decussatis, suturis sub-excavatis, columellā vix truncatā; pellucido-albā, fasciā opaco-albā ad suturas et, in anfractu ultimo, ad angulum.*

THE KEELED ACHATINA. Shell pyramidally conical, flatly angled at the base, whorls six to seven in number, flatly convex, under the lens very minutely decussated, sutures somewhat hollowed, columella scarcely truncated; transparent white, encircled at the sutures with a band of opake white, continued round the angle of the last whorl.

PFEIFFER, Symbolæ, vol. iii. p. 90.

Hab. — ?

An interesting species, distinguished by its angular structure and delicate milk-white sutural band.

ACHATINA

PLATE VII

FIGURE 1. (See page 100)

FIGURE 2. (See page 100)

FIGURE 3. (See page 100)

FIGURE 4. (See page 100)

FIGURE 5. (See page 100)

FIGURE 6. (See page 100)

FIGURE 7. (See page 100)

FIGURE 8. (See page 100)

FIGURE 9. (See page 100)

FIGURE 10. (See page 100)

FIGURE 11. (See page 100)

FIGURE 12. (See page 100)

FIGURE 13. (See page 100)

FIGURE 14. (See page 100)

FIGURE 15. (See page 100)

ACHATINA.

PLATE VII.

Figure 1. (See page 100.)

Figure 2. (See page 100.)

Figure 3. (See page 100.)

Figure 4. (See page 100.)

Figure 5. (See page 100.)

Figure 6. (See page 100.)

Figure 7. (See page 100.)

Figure 8. (See page 100.)

Figure 9. (See page 100.)

Figure 10. (See page 100.)

Figure 11. (See page 100.)

Figure 12. (See page 100.)

Figure 13. (See page 100.)

Figure 14. (See page 100.)

Figure 15. (See page 100.)

Figure 16. (See page 100.)

Figure 17. (See page 100.)

Figure 18. (See page 100.)

Figure 19. (See page 100.)

Figure 20. (See page 100.)

Figure 21. (See page 100.)

Figure 22. (See page 100.)

Figure 23. (See page 100.)

Figure 24. (See page 100.)

Figure 25. (See page 100.)

Figure 26. (See page 100.)

Figure 27. (See page 100.)

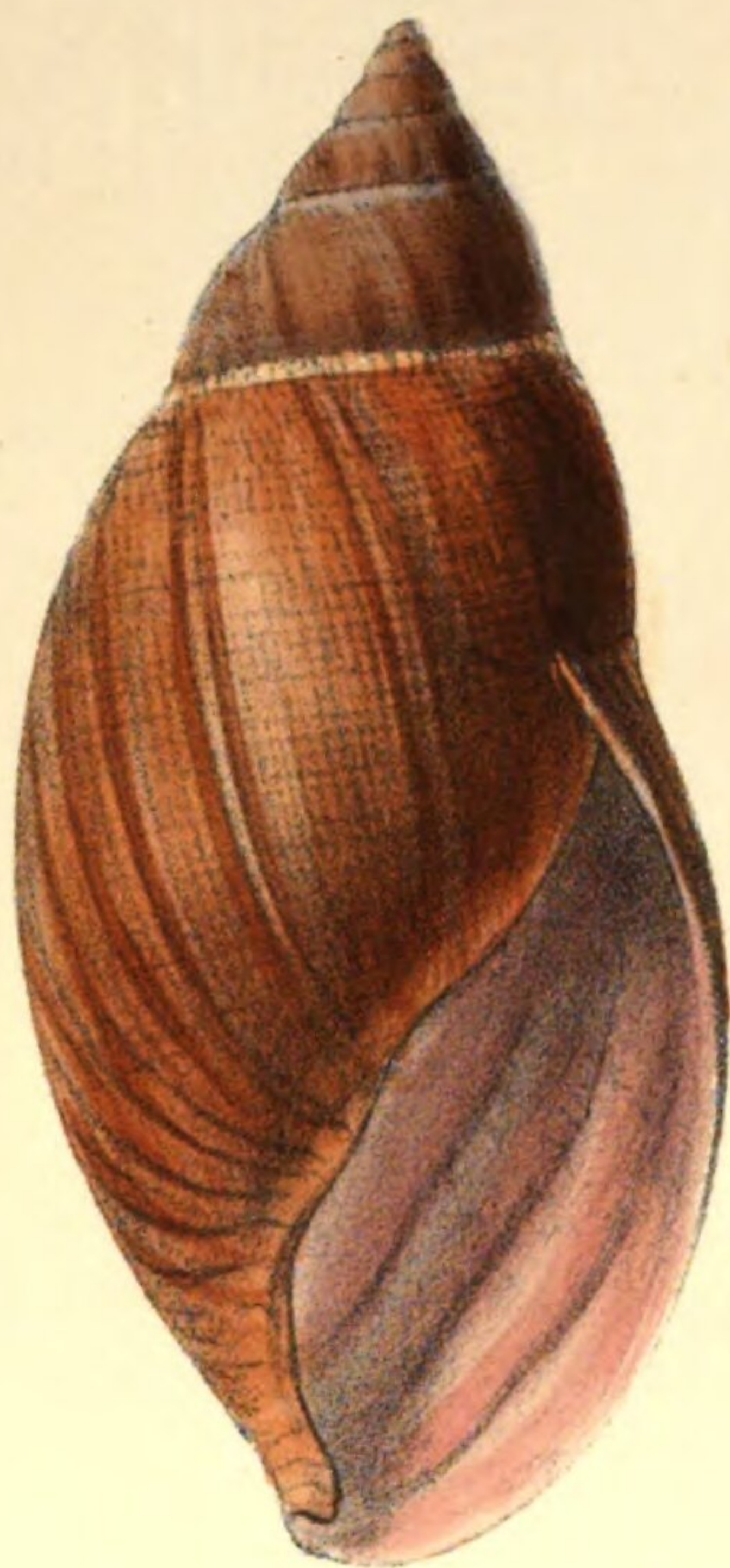
Figure 28. (See page 100.)

Figure 29. (See page 100.)

Figure 30. (See page 100.)



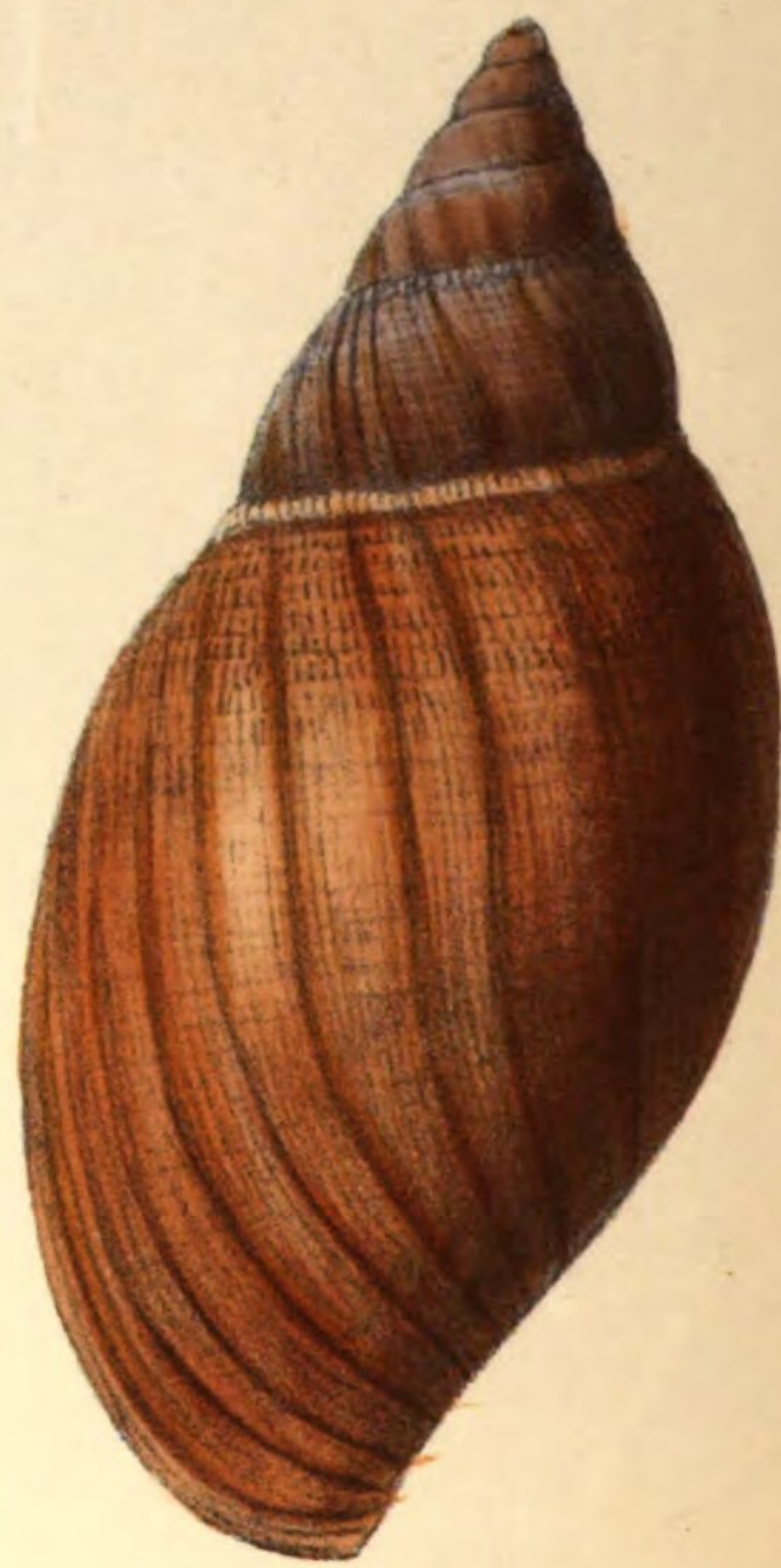
25.



26. a.



27.



26. b.

ACHATINA.

Plate VIII.

Species 25. (Mus. Dennison.)

ACHATINA MULLERI. *Achat. testâ fusiformi, spirâ elongatâ, anfractibus octo, longitudinaliter creberrimè plicato-striatis, ad suturas crenulatis, columellâ subcontortâ, conspicuè truncatâ; pellucido-fuscescente, strigis castaneis remotis irregularibus pictâ.*

MULLER'S ACHATINA. Shell fusiform, spire elongated, whorls eight in number, longitudinally very closely plicately striated, crenulated at the sutures, columella slightly twisted, conspicuously truncated; light transparent brown, painted with irregular distant chesnut streaks.

FERUSSAC, Prodrôme, p. 50. No. 357.

Achatina dactylus, Broderip.

Hab. Tumaco, West Coast of South America.

Dr. Pfeiffer refers this shell to the *Buccinum striatum* of Muller, but there is no mention of the characteristic striped painting in the description of that author; neither is there any account of the delicate tinge of yellow or rose colouring which characterizes the species referred to it by M. Deshayes, namely, the *Achatina rosea*. There is no doubt, however, of the shell under consideration being identical with that figured by Chemnitz under the head of *B. striatum* in Conch. Cab. vol. ix. pl. 120. f. 1030.

Species 26. (Fig. a and b, Mus. Cuming.)

ACHATINA SOWERBYANA. *Achat. testâ ovato-fusiformi, tenuiculâ, subventricosâ, anfractibus sex ad septem, undique pulcherrimè granoso-decussatis, ad suturas crenulatis, columellâ valdè arcuatâ, leviter contortâ, conspicuè truncatâ; diaphano-fuscescente, nitente, strigis longitudinalibus castaneis angustis frequentibus irregulariter pictâ.*

SOWERBY'S ACHATINA. Shell ovately fusiform, somewhat thin, rather ventricose, whorls six to seven in number, everywhere very beautifully granosely decussated, crenulated at the sutures, columella much arched, slightly twisted, conspicuously truncated; bright transparent brown, shining, irregularly painted with frequent narrow chesnut streaks.

PFEIFFER, Pro. Zool. Soc., 1846. p. 32.

Hab. Mexico.

A fine large delicately bright transparent species of the *Glandina* section of the genus, prettily granulated throughout.

Species 27. (Mus. Dennison.)

ACHATINA LIGNARIA. *Achat. testâ oblongo-cylindraccâ, anfractibus octo, granulis oblongis undiquè exsculptis, ad suturas rudè crenulatis, columellâ abruptè truncatâ, aperturâ parviusculâ; fuscescente-spadiceâ, strigis angustis saturatioribus subobscurè et irregulariter notatâ.*

THE WOODEN ACHATINA. Shell oblong-cylindrical, whorls eight in number, sculptured throughout with oblong granules, rudely crenulated at the sutures, columella abruptly truncated, aperture rather small; light brown bay, somewhat obscurely and irregularly marked with streaks of a darker colour.

Hab. —? *Zinkmunda*

This fine species from the collection of J. Dennison, Esq., approaches nearer to *A. Sowerbyana* than to any hitherto described.

ALPHABET

Page 1

Section 1. (This section contains the first part of the alphabet, from A to Z, and the corresponding numbers.)

Section 2. (This section contains the second part of the alphabet, from A to Z, and the corresponding numbers.)

Section 3. (This section contains the third part of the alphabet, from A to Z, and the corresponding numbers.)

Section 4. (This section contains the fourth part of the alphabet, from A to Z, and the corresponding numbers.)

Section 5. (This section contains the fifth part of the alphabet, from A to Z, and the corresponding numbers.)

Section 6. (This section contains the sixth part of the alphabet, from A to Z, and the corresponding numbers.)

Section 7. (This section contains the seventh part of the alphabet, from A to Z, and the corresponding numbers.)



29.



28.



30.



31.



31. b.



33.



32.

ACHATINA.

PLATE IX.

Species 28. (Mus. Cuming.)

ACHATINA ALABASTER. *Achat. testā conico-ovatā, crassiusculā, anfractibus septem, sub lente minutissimè spiraliter striatis, suturis subimpressis, columellā vix truncatā, aperturā parvā; pellucido-albā, fasciā aurantio-castaneā medio cingulatā.*

THE ALABASTER ACHATINA. Shell conically ovate, whorls seven in number, very minutely spirally striated beneath the lens, sutures slightly impressed, columella scarcely truncated, aperture small; transparent white, encircled round the middle with an orange-chestnut band.

DESHAYES, Anim. sans vert. vol. viii. p. 312.

Helix alabaster, Rang.

Hab. Prince's Islands, West Africa.

The bright chestnut band which encircles this species, is constant in all the examples I have seen.

Fig. 29. (Mus. Cuming.)

For this species see Plate X. Sp. 35, *A. fasciata*, of which the shell here figured (*A. crenata*, Swainson) is a variety.

Species 30. (Mus. Cuming.)

ACHATINA REEVEANA. *Achat. testā conico-ovatā, tenuiculā, anfractibus septem, sub lente minutissimè spiraliter striatis, obliquè subtiliter plicato-striatis, ad suturas concentricè crenulatis, columellā vix truncatā, aperturā parviusculā; pellucido-albā, fasciā obscurā luteo-fusca medio cingulatā.*

REEVE'S ACHATINA. Shell conically ovate, rather thin, whorls seven in number, very minutely spirally striated beneath the lens, obliquely finely plicately striated, concentrically crenulated at the sutures, columella scarcely truncated, aperture rather small; transparent white, encircled round the middle with an obscure yellowish-brown band.

PFEIFFER, Monog. Helic. viv. vol. ii. p. 247.

Hab. Banks of the river Gaboon, West Africa.

Distinguished from *A. alabaster*, to which it is next allied, by its larger and lighter structure, sutural crenulations, and faint colouring of the band.

Species 31. (Fig. a and b, Mus. Dennison.)

ACHATINA FUSIFORMIS. *Achat. testā fusiformi-oblongā, tenui, ventricosā, anfractibus septem, supernè obscure subangulato-productis, longitudinaliter creberrimè subirregulariter plicato-striatis, striis minutis impressis spiraliter indentatis, ad suturas crispato-marginatis, columellā abruptè truncatā, aperturā angustā; stramineā vel fuscescente, eximie miniatā, strigis angustis hic illic saturatè pictā, intus pallidè rosaceā.*

THE FUSIFORM ACHATINA. Shell fusiformly oblong, thin, ventricose, whorls seven in number, obscurely slightly angulated round the upper part, longitudinally very closely but rather irregularly plicately striated, spirally indented with minute impressed striæ, crisply margined at the sutures, columella abruptly truncated, aperture narrow; pale straw-colour, or brownish, delicately tinged with vermilion, and painted here and there with narrow streaks of darker colour, pale rose within.

PFEIFFER, Pro. Zool. Soc., 1845, p. 75.

Hab. Mountain of Coban, Vera Cruz, Central America.

It is scarcely possible to do justice to the delicate colouring and plicated sculpture of this beautiful species, the inner edge of the lip of which is stained with a peculiar saturnine vermilion, whilst the entire shell is more or less tinged with a warm hue of the same, excepting in the variety represented at Fig. 31. b, which is of a bright silky straw-colour.

Species 32. (Mus. Dennison.)

ACHATINA DENNISONI. *Achat. testā fusiformi-ovatā, spirā subacuminatā, anfractibus sex, subrudè exiliter plicato-striatis, striis subtilibus impressis decussatis, apice subpapillari, columellā arcuatā et contortā, attenuatè truncatā; fuscescente, fusco apicem versus variegatā, anfractu ultimo immaculato, fasciā pallidā obscurā cingulato, columellā pallidè rosaceā, supra livido-cærulescente, fusco marginatā.*

DENNISON'S ACHATINA. Shell fusiformly ovate, spire rather acuminate, whorls six in number, somewhat rudely faintly plicately striated, decussated with fine impressed striæ, apex somewhat papillary, columella arched and twisted, attenuately truncated; pale brown, variegated towards the apex with darker

brown, last whorl unspotted, encircled with a pale obscure band, columella pinkish.

Hab. Bogota, Central America.

A new and very distinct species for which I am indebted to the magnificent collection of J. Dennison, Esq., who received it from the above-named locality.

Species 33. (Mus. Dennison.)

ACHATINA MAGNIFICA. *Achat. testâ subfusiformi-ovatâ, anfractibus quinque ad sex, subrugosis, obscure tenuiplicatis, striis minutis spiralibus obscure decussatis, columellâ arcuatâ; cæruleo-viridi, luteo fasciatâ et flammâtâ, columellâ cærulescente, supra intensè pur-*

pureo-castaneâ, labro intus nigricante-castaneo, margine miniato.

THE MAGNIFICENT ACHATINA. Shell somewhat fusiformly ovate, whorls five to six in number, rather rough, obscurely finely plicated, obscurely decussated with minute spiral striæ, columella arched; dark bluish-green, banded and flamed with yellow, columella bluish, purple chestnut above, lip blackish chestnut within, edged with vermilion.

PFEIFFER, Pro. Zool. Soc., 1847, p. 232.

Hab. Quito, Equador, Central America.

Another very beautiful species from the collection of J. Dennison, Esq., of which there is also a specimen in the possession of Mr. Cuming.



ACHATINA.

Plate X.

Species 34. (Mus. Cuming.)

ACHATINA PICTA. *Achat. testā conico-ovatā, spiræ suturis impressis, anfractibus septem, lævibus, politis, vel obliquè tenuissimè striatis, columellā brevi, vix truncatā, aperturā parvā, luteā, maculis castaneis nebulatis, tæniā duplicatā, medio cinctā, maculis viridibus grandibus hic illic ornatā.*

THE PAINTED ACHATINA. Shell conically ovate, sutures of the spire impressed, whorls seven in number, smooth, polished, or obliquely very finely striated, columella short, scarcely truncated, aperture small; yellow, encircled round the middle with a double fillet of chestnut clouded spots, and ornamented here and there with large green blotches.

REEVE, Pro. Zool. Soc., 1842, p. 56. Conch. Syst. vol. ii. p. 87. pl. 177. f. 5.

Hab. Island of Cuba.

Very richly painted, but in a different style from either of the following species.

Species 35. (Fig. a, b, c; and Pl. IX. Fig. 29, Mus. Cuming.)

ACHATINA FASCIATA. *Achat. testā subpyramidal-ovatā, solidiusculā, anfractibus octo, plano-convexis, lævibus, politis, columellā breviusculā, callosā, vix truncatā, aperturā parvā, labro crenato; albā, fasciis latis luteis, maculis viridibus quadrato-oblongis obliquis ornatā, lineis viridibus cingulatā; interdum albā, viridi lineatā, apice roseo.*

THE BANDED ACHATINA. Shell somewhat pyramidally ovate, rather solid, whorls eight in number, flatly convex, smooth, polished, columella rather short, callous, scarcely truncated, aperture small, lip crenated; white, ornamented with broad yellow bands painted with large oblique square-oblong green blotches, encircled with green lines; sometimes white, with the green lines only, apex pink.

SWAINSON, Zool. Illus., vol. iii. pl. 162.

Buccinum fasciatum, Muller.

Bulla fasciata, Chemnitz.

Bulimus vexillum, Bruguière.

Achatina vexillum, Lamarck,

Cochlitoma vexillum, Férussac.

Achatina lineata, Valenciennes.

Varietates.

Achatina crenata, Swainson.

Achatina pallida, Swainson.

Achatina Anais, Lesson.

Bulimus zebra, D'Orbigny.

Hab. Island of Cuba, West Indies.

It will be seen by the accompanying figures and the one referred to in the preceding plate, that the painting of this species is extremely variable; one portion of the colour, however, the fine green lines which encircle the shell, is rarely absent, and it is curious to remark that where these reach the lip, there is a notch corresponding to each line.

Species 36. (Fig. a, b, c, Mus. Cuming.)

ACHATINA VIRGINEA. *Achat. testā pyramidal-ovatā, solidiusculā, anfractibus septem ad octo, lævibus, politis, columellā arcuatā, brevi, truncatā; aperturā parvā; cærulescente-albā, lineis fasciisque angustis miniatis viridibus et nigris variè cingulatā, columellā nunc albā, nunc intensè roseā.*

THE VIRGIN ACHATINA. Shell pyramidally ovate, rather solid, whorls seven to eight in number, smooth, polished, columella small, short, truncated; aperture small; bluish-white, variously encircled with vermilion green and black lines and narrow bands, columella sometimes white, sometimes deep rose.

LAMARCK, Anim. sans vert. (Deshaye's edit.) vol. viii. p. 299.

Bulla virginea, Linnæus.

Buccinum virgineum, Muller.

Lignus virgineus, De Montford.

Bulimus virgineus, Bruguière.

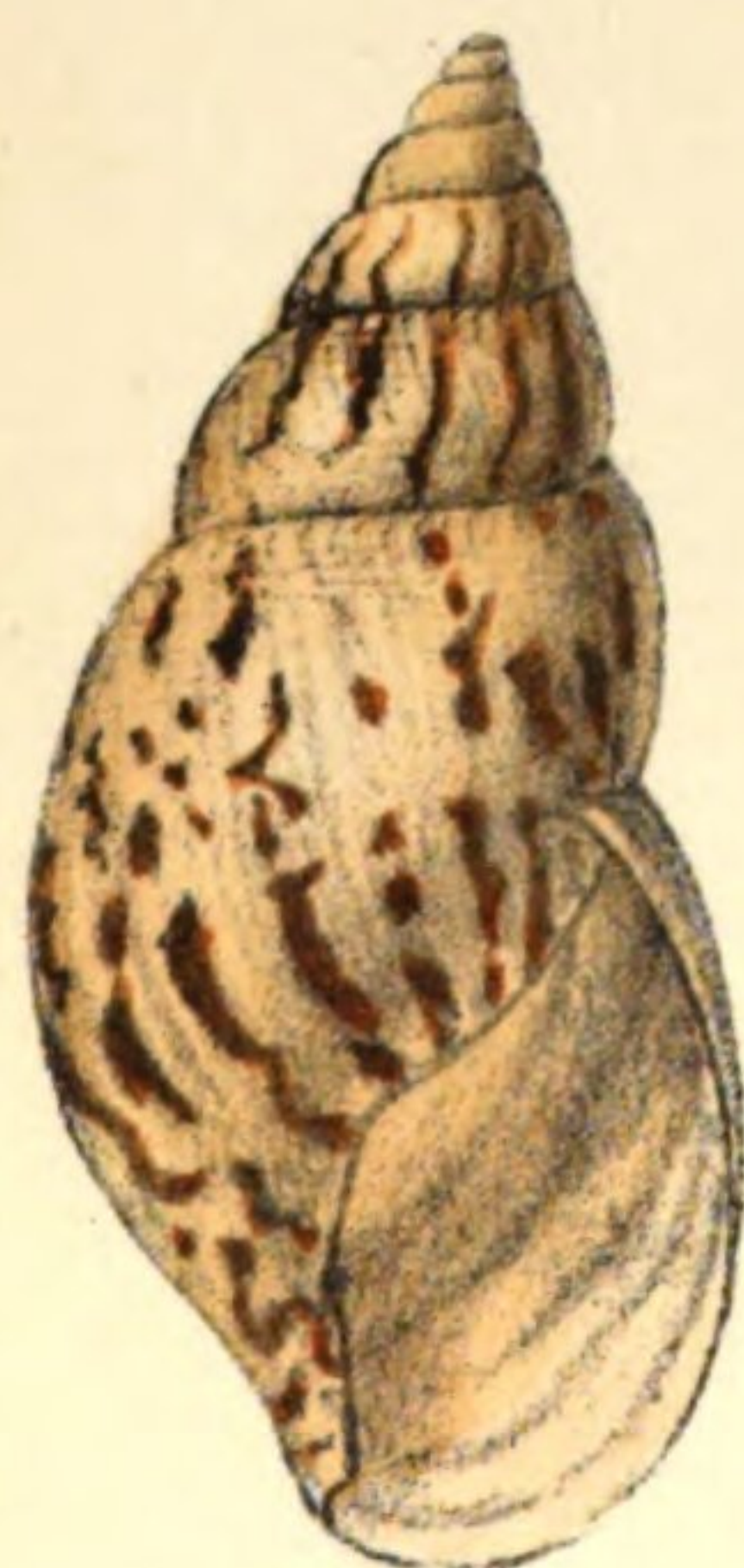
Cochlitoma virginea, Férussac.

Achatina vittata, Swainson.

Hab. Cuba &c., West Indies.

There is little variation in the style of painting of this well-known species although the colours occasionally differ. They are mostly very brilliant and the shell has all the appearance of painted porcelain.

March, 1849.



37.



29.



8c



38.

ACHATINA.

PLATE XI.

Species 29. (Mus. Brit.)

ACHATINA TINCTA. *Achat. testâ acuminato-oblongâ, crassiusculâ, anfractibus septem ad octo, lævibus, ad suturas marginatis, columellâ contortâ, subangustè truncatâ; flavidâ, castaneo profusè tinctâ, apice purpurascente, columellâ et aperturae fauce cærulescente-albis.*

THE STAINED ACHATINA. Shell acuminate oblong, rather thick, whorls seven to eight in number, smooth, marginated at the sutures, columella twisted, rather narrowly truncated; yellow, profusely stained with chestnut, columella and interior of the aperture bluish-white.

REEVE, Conch. Syst. vol. ii. pl. 179. f. 18.

Hab. —? *West Africa.*

The painting of this shell is very characteristic, and the outer surface of it is further distinguished by its smooth porcelain appearance. It is an extremely rare species; the specimen represented in the 'Conchologia Systematica' is in Mr. Cuming's collection, and that here figured from the British Museum was formerly in the Tankerville collection, afterwards in that of W. J. Broderip, Esq.

Species 37. (Mus. Cuming.)

ACHATINA SEMISculPTA. *Achat. testâ subfusiformi-oblongâ, anfractibus septem, supernè granato-striatis, infernè lævibus, columellâ arcuatâ, subdepresso-truncatâ; albidâ, castaneo interruptè fulguratâ.*

THE HALF-SCULPTURED ACHATINA. Shell somewhat fusiformly oblong, whorls seven in number, granosely striated round the upper part, smooth round the lower, columella arched, rather depressly truncated;

whitish, streaked in an interrupted manner with chestnut.

PFEIFFER, Pro. Zool. Soc., 1845. p. 74.

Hab. Benguela, West Africa.

All Mr. Cuming's examples of this species are distinguished by the same broken interrupted style of painting with which this is characterized.

Species 38. (Mus. Cuming.)

ACHATINA COLUMNA. *Achat. testâ elongato-turritâ, anfractibus septem, subrudè granoso-striatis, suturis depresso-concavis, columellâ contortâ, callosâ, plicato-productâ, apertura parvâ; flavidâ, castaneo undiquè fulguratâ, columellâ et aperturae fauce cærulescente-albis.*

THE COLUMN ACHATINA. Shell elongately turreted, whorls seven in number, rather rudely granosely striated, sutures depressly concave, columella twisted, callous, produced in the form of a plait, aperture small; yellow, streaked throughout with narrow chestnut flames, columella and interior of the aperture bluish-white.

BRUGUIERE, Encyclopédie Méthodique, vol. i. f. 332.

Buccinum columna, Muller.

Limax flammeus, Martyn.

Helix columna, Chemnitz.

Hab. Prince's Islands, West Africa.

It is somewhat remarkable that no species has been discovered to approximate to this. Lamarck, believing it to be an inhabitant of freshwater, placed it originally in the genus *Lymnæa*.

March, 1849.

ACHATINA

Species 19 (Plate 100)
The shell is somewhat globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 20 (Plate 101)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 21 (Plate 102)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 22 (Plate 103)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 23 (Plate 104)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 24 (Plate 105)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 25 (Plate 106)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.

Species 26 (Plate 107)
The shell is globose, with a high, rounded spire. The aperture is small and narrow, and the suture is deep and distinct. The color is a uniform brownish-grey.



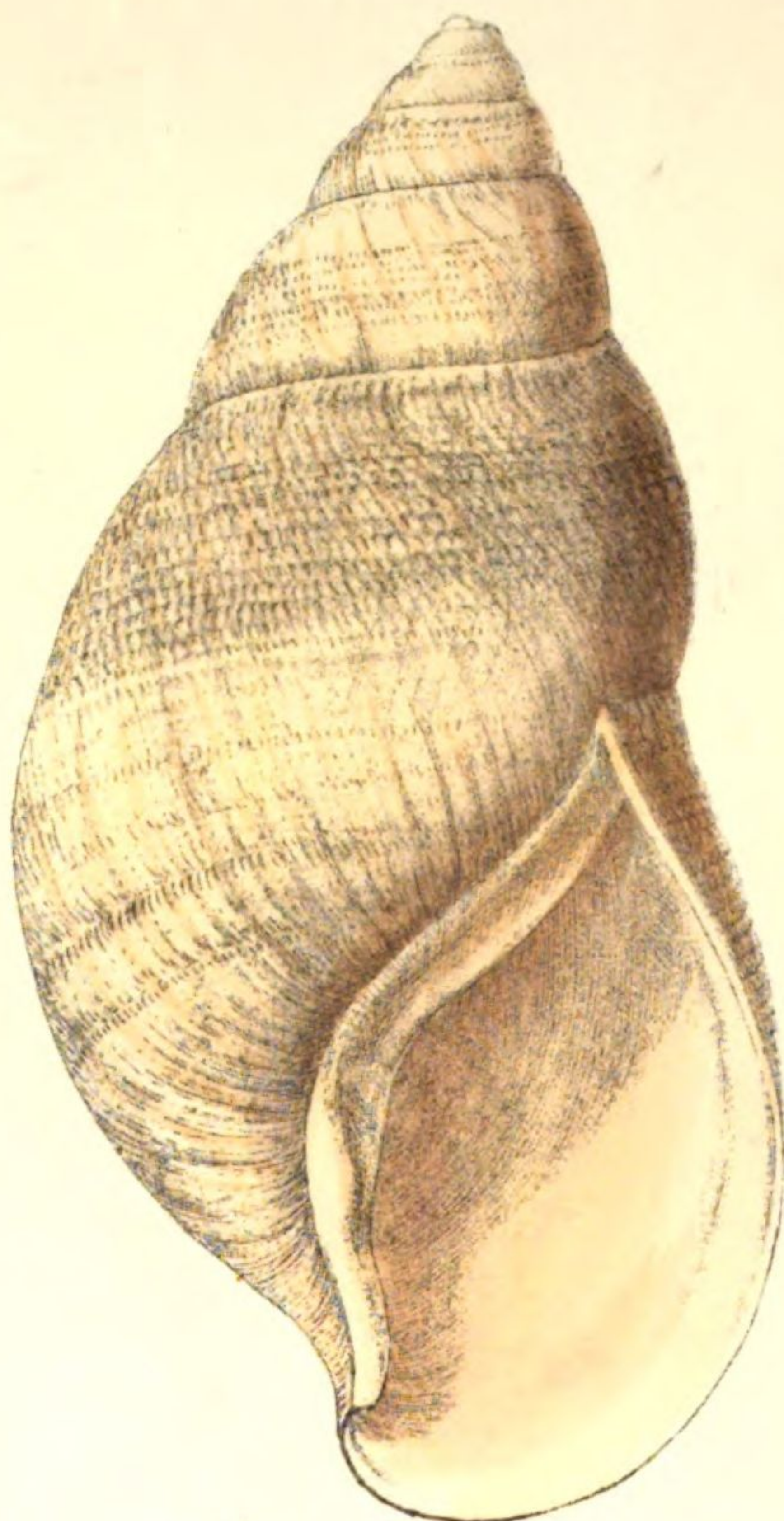
38.



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41.

ACHATINA.

PLATE XII.

Species 42. (Fig. 38. Mus. Cuming.)

ACHATINA SIDERATUS. *Achat. testā ovatā, ventricosā, tenuiculā, anfractibus quinque, creberrimè minutè granulatis, columellā contortā; fuscā, castaneo acutè et subtiliter fulguratā, aperturæ fauce pallidè cærulescente.*

THE THUNDER-STRICKEN ACHATINA. Shell ovate, ventricose, rather thin, whorls five in number, very closely minutely granulated, columella twisted; brown, marked with fine sharply zigzag chestnut streaks, interior of the aperture faintly blue.

Hab. —?

This is apparently a shell of immature growth, but so peculiar in its colour and marking, that I venture to describe it as new. Of a warm brown silken hue, painted with fine sharply zigzag streaks somewhat broken, much more delicate and numerous towards the apex.

Species 39. (Mus. Cuming.)

ACHATINA FLAMMIGERA. *Achat. testā subpyramidalis, ovatā, anfractibus septem ad octo, obliquè obscure plicato-rugosis, columellā rectā, vix truncatā, aperturā parviusculā; lutescente, flammis subtilibus frequentibus ustulato-fuscis obliquè pictā, basi nigricante-castaneā.*

THE FLAMED ACHATINA. Shell somewhat pyramidally ovate, whorls seven to eight in number, obliquely obscurely plicately wrinkled, columella straight, scarcely truncated, aperture rather small; yellowish, obliquely painted with frequent fine burnt-brown flames, base blackish chestnut.

DESHAYES, Enc. Méth. vol. ii. p. 10.

Cochlitoma flammigera, Férussac.

Bulinus Richii, Lamarck.

Achatina Richii, mihi, in Conch. Syst.

Hab. Peru.

The columella being very slightly truncated in this species, partakes very much of the character of *Bulinus*.

Species 40. (Mus. Cuming.)

ACHATINA USTULATA. *Achat. testā cylindræo-oblongā,*

spirā exsertā, anfractibus septem, granato-striatis, striis in anfractu ultimo evanidis, columellā subcontortā, abruptè truncatā, aperturā parvā; nigricante-castaneā, strigis lutescentibus longitudinaliter fulguratis, aperturæ fauce cærulescente.

THE BURNT ACHATINA. Shell cylindrically oblong, spire stretched out, whorls seven in number, granosely striated, striæ fading away in the last whorl, columella slightly twisted, abruptly truncated, aperture small; blackish chestnut, marked with longitudinal yellowish zigzag streaks, interior of the aperture bluish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. viii. p. 297.

Cochlitoma ustulata, Férussac.

Hab. Cape of Good Hope; Krauss.

Well characterized by its cylindrically drawn out form and style of painting.

Species 41. (Mus. Rolfe.)

ACHATINA LACTEA. *Achat. testā ovatā, crassiusculā, anfractibus tumidiusculis, undique plicato-striatis et granatis, columellā arcuatā, callosā, attenuatè truncatā; intus extusque lacteā, immaculatā.*

THE CREAM-COLOURED ACHATINA. Shell ovate, rather thick, whorls somewhat swollen, plicately striated and grained, columella arched, callous, attenuately truncated, cream-coloured within and without, unspotted.

REEVE, Pro. Zool. Soc., 1842. p. 55. Conch. Syst. vol. ii. p. 86. pl. 177. f. 6.

Hab. Zanzibar.

An extremely characteristic species of a pure uniform cream colour without any indication of pattern.

The specimen originally described, and from which the accompanying figure from the Conchologia Systematica was engraved, is in the possession of the Rev. S. C. E. Neville Rolfe of Heacham Hall. Mr. Cuming has since obtained similar specimens from Zanzibar.



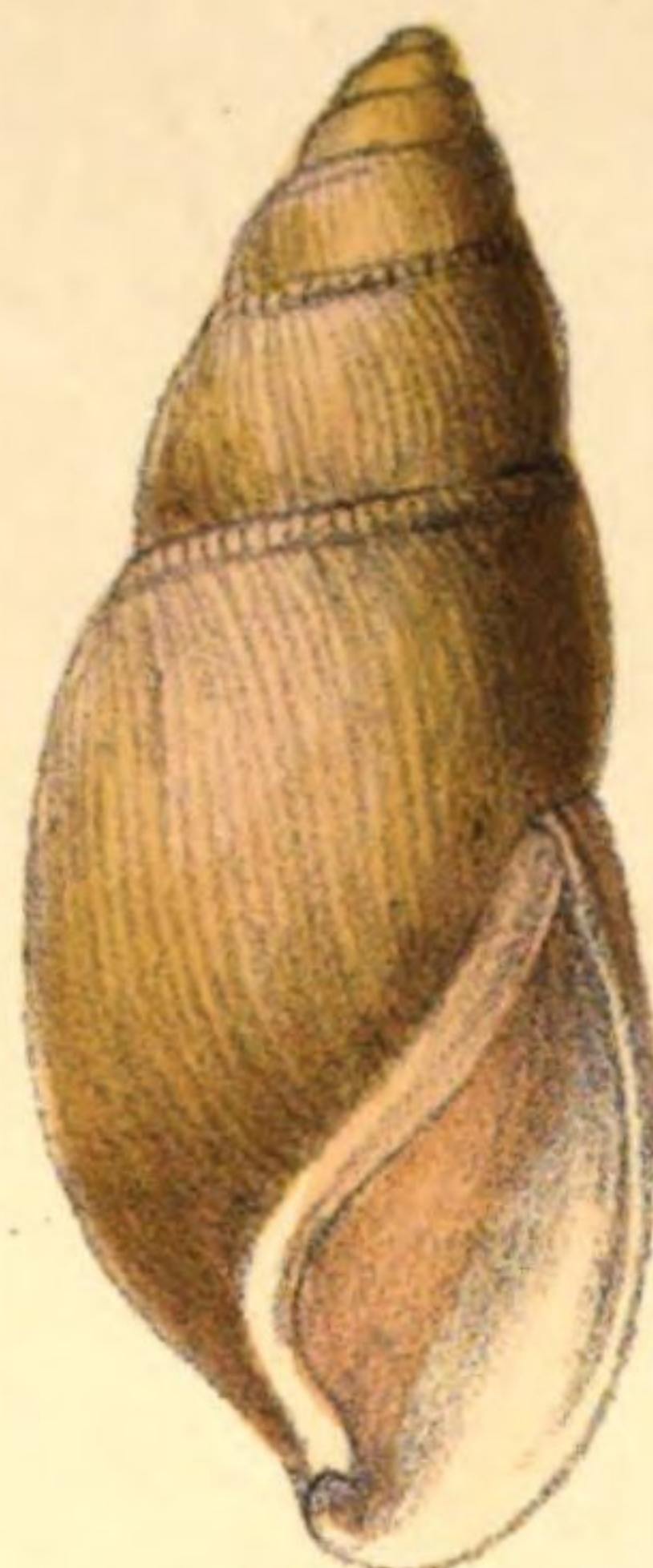
44.



43.



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46 a.



47.



48.



46 b.

A. carminensis

ACHATINA.

PLATE XIII.

Species 43. (Mus. Cuming.)

ACHATINA ALGIRA. *Achat. testā acuminato-oblongā, tenui, pellucidā, epidermide pallidē stramineā, anfractibus sex ad septem, longitudinaliter subrudē tenuistriatis, columellā arcuatā.*

THE ALGERINE ACHATINA. Shell acuminate oblong, thin, transparent, with a pale straw-coloured epidermis, whorls six to seven in number, longitudinally rather rudely finely striated, columella arched.

DESHAYES, Expedition de Morée, p. 165.

Bulimus Algirus, Bruguière.

Cochlicopa Poireti, Férussac.

Achatina Poireti, Rossmasler.

Hab. Southern Europe and Algeria.

This delicate and well-known species inhabits the provinces of Austria and Italy, the Morea, some of the Islands of the Mediterranean, and the Algerine district of North Africa.

Species 44. (Mus. Cuming.)

ACHATINA CYANOSTOMA. *Achat. testā elongato-turritā, tenui, subpellucidā, anfractibus novem ad decem, obscure irregulariter tenuistriatis, columellā angustā, arcuatā; albido-corneā, castaneo-fusco nitente longitudinaliter tinctā, aperturæ fauce cærulescente.*

THE BLUE-MOUTH ACHATINA. Shell elongately turreted, thin, semitransparent, whorls nine to ten in number, obscurely irregularly finely striated, columella narrow, arched; whitish horn-colour, longitudinally stained with shining chestnut-brown, interior of the aperture bluish.

RUPPELL, Pfeiffer, Symbolæ, vol. ii. f. 58.

Hab. Abyssinia; Rüppell.

The rich chestnut-brown colouring of this species resides only in a thin horny epidermal coating with which it is covered.

Species 45. (Mus. Cuming.)

ACHATINA TURRIS. *Achat. testā oblongo-turritā, tenuiculā, diaphanā, anfractibus septem, longitudinaliter creberrimè et tenuissimè costulato-striatis, columellā rectā, abruptè truncatā, aperturā parvā; pallidē carneā.*

THE TURRET ACHATINA. Shell oblong-turreted, rather thin, diaphanous, whorls seven in number, longitudinally very closely and finely rib-like striated, columella straight, abruptly truncated, aperture small; pale flesh-colour.

PFEIFFER, Symbolæ, vol. iii. f. 91.

Hab. — ?

Distinguished from the following species, to which it is nearly allied, by its more elongated structure and smaller aperture, and more delicate striæ.

Species 46. (Fig. a, Mus. Cuming; Fig. b, Mus. Dennison.)

ACHATINA ROSEA. *Achat. cylindræo-oblongā, interdum subfusiformi, anfractibus septem, ad suturas marginatis, longitudinaliter creberrimè costulato-striatis, striis interstitiisque punctato-indentatis, columellā subprofundè arcuatā et contortā, abruptè truncatā; stramineā, vel, roseā, vel pallidē incarnato spadiceā.*

THE ROSE ACHATINA. Shell cylindrically oblong, sometimes inclined to fusiform, whorls seven in number, marginated at the sutures, longitudinally very closely rib-like striated, striæ and interstices indented with punctures, columella rather deeply arched and twisted, abruptly truncated; straw-colour, or rose, or light flesh-bay.

GRAY, Annals of Philosophy, vol. ix. p. 414.

Cochlicopa rosea, Férussac.

Glandina rosea, Pfeiffer.

Hab. Central America (at the roots of trees); Cuming. Honduras; Dyson. Vera Cruz, &c.

Distinguished from its congeners by the minute indented punctures which characterize the surface of the shell in all its varieties.

Species 47. (Mus. Cuming.)

ACHATINA TRUNCATA. *Achat. testā fusiformi-oblongā, subangustā, anfractibus sex, longitudinaliter creberrimè plicato-costulato-striatis, columellā arcuatā et contortā; cinerascens-rosaceā, aperturæ fauce rosaceā.*

THE TRUNCATED ACHATINA. Shell fusiformly oblong, rather narrow, whorls six in number, longitudinally very closely plicately rib-like striated, columella arched and twisted; ashy-pink, interior of the aperture pink.

Glandina truncata, Say, Amer. Conch. pl. 20.
Hab. Florida.

This very interesting shell is, without doubt, the *Glandina truncata* of Say, according to his figure, but whether it is the original *Bulla truncata* of Gmelin, it is impossible to tell; for Gmelin, like Say in the instance before us, may have confounded two or three species as synonyms under one specific name. A close examination of the characters of the shell under consideration, which, as being the species figured by Say, may as well have the name *truncata* assigned to it, will show that it is perfectly distinct. The rib-like striæ have a more elevated plicate structure, and they differ materially in having no indented punctures; the colouring is also peculiar, the aperture being tinged with a rich flesh-pink.

Species 48. (Mus. Cuming.)

ACHATINA VANUXEMENSIS. *Achat. testâ fusiformi-ovatâ, tenui, inflatâ, anfractibus sex, longitudinaliter costulato-striatis, ad suturas marginatis, columellâ arcuatâ; fulvâ, fusco hic illic pallidè strigatâ, maculis subobscuris albidis sparsim floccatâ.*

VANUXEMEN'S ACHATINA. Shell fusiformly ovate, thin, inflated, whorls six in number, longitudinally rib-like striated, marginated at the sutures, columella arched; fulvous, palely streaked here and there with brown, sparingly flaked with rather obscure white spots.

LEA, Trans. Amer. Phil. Soc. (Extr.) p. 196, pl. 19. f. 78.
Hab. Mexico.

This species of Mr. Lea's approaches very closely to that subsequently named *A. Sowerbyana*, by Dr. Pfeiffer, represented at Pl. VIII. The white flakes serve nevertheless to distinguish it.



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58.

ACHATINA.

PLATE XIV.

Species 49. (Mus. Cuming.)

ACHATINA PHILIPPIANA. *Achat. testâ fusiformi-ovatâ, subpellucidâ, anfractibus octo, supernè rotundatis, undique longitudinaliter creberrimè costulatis, columellâ contortâ, attenuatè truncatâ, aperturâ parviusculâ, medio subdepressâ; sericeo-lutescente, strigis latis intensè purpureo-brunneis, e suturis hic illic decurrentibus, conspicuè pictâ.*

PHILIPPI'S ACHATINA. Shell fusiformly ovate, somewhat transparent, whorls eight in number, rounded at the upper part, longitudinally very closely finely ribbed throughout, columella twisted, attenuately truncated, aperture rather small, slightly depressed in the middle; pale silken yellow, conspicuously painted with broad deep purple-brown streaks, descending here and there from the sutures.

PFEIFFER, (*Glandina*.) Symbolæ, vol. iii. p. 90.

Hab. Jamaica, Gosse.

The fine ribs with which the surface of this shell is excessively closely sculptured, give it a delicate silken aspect. It is very richly painted in the manner above described.

Species 50. (Mus. Dennison.)

ACHATINA MONILIFERA. *Achat. testâ oblongo-ovatâ, ventricosâ, tenui, pellucidâ, anfractibus septem, longitudinaliter creberrimè costulato-striatis, striis basin versus evanidis, columellâ contortâ, abruptè truncatâ; fulvoro-seâ, corneâ, strigis angustis remotis rufo-brunneis irregulariter pictâ.*

THE NECKLACE-BOUND ACHATINA. Shell oblong-ovate, ventricose, thin, transparent, whorls seven in number, longitudinally very closely striated after the manner of fine ribs, striæ fading towards the base, columella twisted, abruptly truncated; fulvous-rose, horny, irregularly painted with distant narrow red-brown streaks.

PFEIFFER, (*Glandina*.) Pro. Zool. Soc., 1845. p. 75.

Hab. Coban, Vera Cruz, Central America; Lattre.

An extremely delicate transparent swollen shell in which the columella is not attenuated as in the last species, but abruptly truncated.

Species 51. (Mus. Cuming.)

ACHATINA OLEACEA. *Achat. testâ cylindraceo-oblongâ,*

pellucido-corneâ, spirâ brevi, anfractibus septem, lævigatis, columellâ subprofundè arcuatâ, aperturâ oblongâ, supernè angustâ, labro medio dilatato; fulvâ, nitente.

THE OLIVE-SHAPED ACHATINA. Shell cylindrically oblong, transparent-horny, spire short, whorls seven in number, smooth, columella rather deeply arched, aperture oblong, narrow at the upper part, lip dilated in the middle; fulvous, shining.

Helix (*Cochlicopa*) *oleacea*, Férussac, Prodrôme, No. 360.

Glandina oleacea, Beck.

Hab. Cuba.

A smooth transparent fulvous horny shell, of cylindric oblong form, without any design of painting.

Species 52. (Mus. Cuming.)

ACHATINA LEUCOZONIAS. *Achat. testâ fusiformi-oblongâ, spirâ subacuminatâ, anfractibus octo, plano-convexis, longitudinaliter subtiliter et creberrimè inciso-striatis, columellâ contortâ, aperturâ oblongâ, labro angulato-dilatato; intensè purpureo-brunneâ, zonulis longitudinalibus angustis albis notatâ, labro albimarginato.*

THE WHITE-ZONED ACHATINA. Shell fusiformly oblong, spire somewhat acuminate, whorls eight in number, flatly convex, longitudinally finely and very closely striated in a grooved manner, columella twisted, aperture oblong, lip angularly dilated; deep purple-brown, marked with narrow longitudinal white zones, lip edged with white.

SOWERBY, Genera of Shells, f. 3.

Voluta leucozonias, Walch, Naturforsch., vol. iv. p. 40. pl. 1. f. 3, 4.

Achatina albolineata, Lamarck.

Helix (*Cochlicopa*.) *leucozonias*, Férussac.

Polyphemus leucozonias, Jan.

Glandina leucozonias, Beck.

Hab. Martinique.

This species is remarkable for the angularly dilated growth of the lip, which forms a slightly elevated ridge or varix at intervals of from four to five in a whorl. The shell being of a uniform dark purple-brown colour with the lip edged with white, these delicate concentric varices appear as stripes, and turning inwards over the columella have the appearance of false plaits. Walch, Gmelin, and Dillwyn, misled by this varicose peculiarity of growth,

and regarding the columella to be truly plaited, placed the species among the Mitres in their genus *Voluta*.

Species 53. (Mus. Cuming.)

ACHATINA LATTREI. *Achat. testā cylindraceo-oblongā, Volvariaformi, spirā brevi, anfractibus septem, convexo-planis, lævibus, cuticulam carneam politam indutis, columellā contortā, lirā callosā marginatā, aperturā elongatā, angustā; fulvā, rufo-brunneo longitudinaliter subremotè strigatā.*

LATTRE'S ACHATINA. Shell cylindrically oblong, Volvaria-shaped, spire short, whorls seven in number, convexly flattened, smooth, covered with a polished horny cuticle, columella twisted, edged with a callous ridge, aperture elongated and narrow; fulvous, longitudinally rather remotely streaked with red-brown.

PFEIFFER, Pro. Zool. Soc. 1845. p. 138.

Hab. Central America; Lattre.

The shell of this species approaches the form of *Volvaria* or *Tornatella*, though totally unconnected with those genera; the columella is not, however, plaited, but elevated at the base into a callous ridge, as in the *Achatina columna*. The entire surface of the shell is covered with a perfectly transparent polished horny cuticle, through which the dark stripes show with additional lustre.

It is a rare and extremely interesting species, collected by M. Lattre in Central America, probably in the province of Vera Cruz, and named by Dr. Pfeiffer in honour of that eminent traveller.

Species 54. (Mus. Dennison.)

ACHATINA NIGRICANS. *Achat. testā oblongo-ovatā, solidiusculā, anfractibus septem, convexis, supernè subtiliter concentricè striatis, deinde lævibus, cuticulam corneam politam indutis, columellā brevi, contortā, attenuatè truncatā, aperturā oblongā, labro medio subdilatato; livido-nigrā, suturis basique fulvis, strigis fulvis perpaucis longitudinalibus notatā.*

THE BLACKISH ACHATINA. Shell oblong-ovate, rather solid, whorls seven in number, convex, finely concentrically striated round the upper part, then smooth, covered with a polished horny cuticle, columella short, twisted, attenuately truncated, aperture oblong, lip slightly dilated in the middle; livid-black, sutures and base fulvous, marked with a very few fulvous streaks.

PFEIFFER, (*Glandina*,) Pro. Zool. Soc., 1845. p. 75.

Hab. Vera Cruz, Central America; Lattre.

An interesting species, covered with a transparent

cuticle of the same highly glazed character as the preceding, from the same locality, more swollen in form, and of a peculiar dark beetle brown or black.

Species 55. (Mus. Cuming.)

ACHATINA VOLUTA. *Achat. testā subcylindraceo-oblongā, oleaceā, solidiusculā, spirā brevi, anfractibus septem, subplano-convexis, lævibus, cuticulam corneam politam indutis, columellā brevi, arcuatā, abruptè truncatā, aperturā elongatā, angustā, labro medio subdilatato; olivaceo-brunnescente, subindistinctè longitudinaliter strigatā.*

THE VOLUTE ACHATINA. Shell somewhat cylindrically oblong, olive-shaped, rather solid, spire short, whorls seven in number, somewhat flatly convex, smooth, covered with a polished horny cuticle, columella short, arched, abruptly truncated, aperture elongated, narrow, lip slightly dilated in the middle; light olive-brown, somewhat indistinctly longitudinally streaked.

DESHAYES, Anim. sans vert. vol. viii. p. 300, note.

Bulla voluta, Chemnitz, Conch. Cab. vol. ix. pt. 2. p. 16. pl. 117. f. 1009, 1010.

Bulimus glans, Bruguière.

Helix (Cochlicopa) glans, Férussac.

Achatina glans, Lamarck.

Polyphemus glans, De Montford.

Glandina glans, Beck.

Glandina olivacea, Schumacher.

Hab. West Indies.

The above species may be regarded as the type of this shining horn-clad group. Though of rare occurrence, it is admirably figured in vol. ix. of the Conchylien Cabinet, published in 1786.

Species 56. (Mus. Cuming.)

ACHATINA DOMINICENSIS. *Achat. testā fusiformi-oblongā, anfractibus septem, convexis, superne subrotundatis, longitudinaliter subtilissimè et creberrimè inciso-striatis, columellā subcontortā, labro medio dilatato; fulvo-aurantiā, strigis latiusculis intensè castaneis, remotis, e suturis descendentibus, notatis.*

THE ST. DOMINGO ACHATINA. Shell fusiformly oblong, whorls seven in number, convex, somewhat rounded at the upper part, longitudinally very finely and closely deeply striated, columella rather twisted, lip dilated in the middle; fulvous-orange, marked with distant rather broad dark chestnut streaks descending from the sutures.

DESHAYES, Anim. sans vert. vol. viii. p. 302, note.

Bulla dominicensis, Gmelin.

Helix (Cochlicopa) Dominicensis, Férussac.

Bulinus maculatus, Bruguière.

Achatina fusco-lineata, Lamarck.

Polyphemus Bruguierius, Bowditch.

Glandina maculata, Beck.

Hab. West Indies.

The varicose peculiarity of growth which characterizes the *A. leucozonias*, is developed in a less prominent degree in this species, the contrast of painting being reversed. The *A. leucozonias*, is of a dark chestnut-brown marked with longitudinal white stripes, in places where the white-edged lip has been matured after the manner of a varix. In the present species the shell is of a uniform orange-yellow, and the periodical maturity of the lip is indicated in its course of growth, about four to five times in a whorl, by a broad chestnut stripe.

Species 57. (Mus. Cuming.)

ACHATINA PERUVIANA. *Achat. testâ fusiformi-oblongâ, spiræ suturis peculiariter profundè excavatis, anfractibus subplano-convexis, longitudinaliter creberrimè costulatis, interstitiis transversim sulcato-striatis, columellâ contortâ, et abruptè truncatâ, aperturâ oblongâ; albâ, flammis undatis longitudinalibus, lineolisque obliquis rufo-fuscis, conspicuè pictâ.*

THE PERUVIAN ACHATINA. Shell fusiformly oblong, sutures of the spire peculiarly deeply excavated, whorls rather flatly convex, longitudinally very closely finely ribbed, interstices marked transversely with grooved striæ, columella twisted and abruptly truncated, aperture oblong; white, conspicuously painted with red-brown longitudinal flames and oblique lines.

LAMARCK, Anim. s. vert. (Deshayes' ed.) vol. viii. p. 301.

Helix (Cochlicopa) pretiosa, Férussac, Hist. Moll. pl. 135. f. 4.

Hab. Peru; Dombey (fide Lamarck).

This species belongs apparently to a distinct type, the chief peculiarity of which resides in the deeply grooved formation of the sutures. It is of rather solid texture with somewhat the aspect of a marine shell, finely ribbed longitudinally, the ribs turning over the upper edge of the whorls into the sutural depression. In painting it is richly marked with red brown stripes, crossed obliquely with fine lines of the same colour.

Species 58. (Mus. Cuming.)

ACHATINA GLABRA. *Achat. testâ acuminato-ovatâ, tenuiculâ, anfractibus septem ad octo, subtilissimè longitudinaliter striatis, glabris, nitidis, columellâ brevi, arcuatâ et contortâ; fulvescente corneâ, strigis fuscis remotis, suturis anfractuum medio descendentes, ornatâ.*

THE SMOOTH ACHATINA. Shell acuminate ovate, rather thin, whorls seven to eight in number, very finely longitudinally striated, smooth, shining, columella short, arched and twisted; light fulvous horn-colour, ornamented with distant brown streaks, descending from the sutures to the middle of the whorls.

PFEIFFER, (*Glandina*) Symbolæ, vol. iii. p. 90.

Hab. Island of Porto Rico.

This species has a smooth glazed appearance, but not arising from the lustre of a horny cuticle, such as that which characterizes the *A. Lattrei* and its congeners.



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ACHATINA.

Plate XV.

Species 59. (Mus. Benson.)

ACHATINA CEYLANICA. *Achat. testā ovato-oblongā, spirā subpyramidatā, anfractibus septem, rotundatis, lævibus, politis, columellā brevi, arcuatā, abruptè truncatā; fulvescente-corneā.*

THE CEYLON ACHATINA. Shell ovately oblong, spire somewhat pyramidal, whorls seven in number, rounded, smooth, polished, columella short, arched, abruptly truncated; pale fulvous horny.

PFEIFFER, Zeitschr. fur Malac., 1845, p. 157.

Hab. Ceylon; Benson, Templeton.

Chiefly distinguished by the confined pyramidal growth of the spire, and short arched columella. The specimen here figured, for which I am indebted to Mr. Benson, was found under some fallen leaves in a grove near Point de Galle.

Species 60. (Mus. Cuming.)

ACHATINA PHILLIPSII. *Achat. testā acuminato-fusiformi, tenui, pellucidā, anfractibus octo, longitudinaliter striatulis, columellā vix arcuatā, attenuatè truncatā, aperturā parvā; fulvescente-corneā, strigis castaneis hic illic concinnè pictā.*

PHILLIPS' ACHATINA. Shell acuminately fusiform, thin, transparent, whorls eight in number, longitudinally faintly striated, columella slightly arched, attenuately truncated, aperture small; light fulvous horny, neatly painted here and there with chestnut stripes.

ADAMS, Pro. Boston Nat. Hist. Soc., 1845, p. 13.

Hab. Jamaica; Gosse.

A very delicate transparent horny species, neatly painted at irregular intervals with longitudinal chestnut stripes.

Species 61. (Mus. Cuming.)

ACHATINA JAMAICENSIS. *Achat. testā fusiformi-turritā, crassiusculā, anfractibus decem convexis, longitudinaliter creberrimè multicostatis, ad suturas subtiliter crenulatis, columellā subrectā, attenuatè truncatā, aperturā parvā; pellucido-albā, strigis rufo-fuscis raris oblique pictā.*

THE JAMAICA ACHATINA. Shell fusiformly turreted, rather thick, whorls ten in number, longitudinally very closely many-ribbed, finely crenulated at the sutures, columella nearly straight, attenuately trun-

cated, aperture small; transparent white, obliquely painted with a few red-brown streaks.

PFEIFFER, Pro. Zool. Soc., 1845, p. 137.

Hab. Jamaica; Gosse.

This species is finely ribbed after the manner of a *Pupa*, where others are simply striated. The painting is arranged obliquely.

Species 62. (Mus. Cuming.)

ACHATINA OBTUSA. *Achat. testā subfusiformi-oblongā, crassiusculā, pellucidā, spirā subobtusā, anfractibus septem, lævibus, ad suturas marginatis, columellā vix contortā, abruptè truncatā; fulvescente-corneā.*

THE OBTUSE ACHATINA. Shell somewhat fusiformly oblong, rather thick, transparent, spire somewhat obtuse, whorls seven in number, smooth, margined at the sutures, columella slightly twisted, abruptly truncated; light fulvous horny.

PFEIFFER, (*Glandina*.) Pro. Zool. Soc., 1845, p. 42.

Hab. Real Llejos, Province of Nicaragua, Central America; Cuming.

Rather a stout shell, but still of so transparent a substance that the columella of the interior is visible.

Species 63. (Mus. Cuming.)

ACHATINA VENUSTA. *Achat. testā subfusiformi-oblongā, anfractibus septem, longitudinaliter creberrimè costulato-striatis, columellā vix contortā, attenuatè truncatā; pellucido-roseā, strigis castaneis, albi-marginatis, hic illic e suturis medio descendentes.*

THE GRACEFUL ACHATINA. Shell somewhat fusiformly oblong, whorls seven in number, longitudinally very closely sculptured with fine rib-like striæ; columella scarcely twisted, attenuately truncated; transparent rose-coloured, with white edged chestnut streaks descending here and there out of the sutures to the middle.

PFEIFFER, (*Glandina*.) Symbolæ, vol. i. p. 46.

Hab. Jamaica.

A delicately rose-tinged species, painted with chestnut streaks edged with white.

May, 1849.

Species 64. (Mus. Cuming.)

ACHATINA GRIFFITHSII. *Achat. testā subfusiformi, spirā acuminatā, anfractibus novem, creberrimè et subtilissimè costulato-striatis, ultimo medio impresso, basi expanso, columellā contortā, attenuatè truncatā; pellucido-albā, strigis castaneis sparsis obliquè pictā.*

GRIFFITH'S ACHATINA. Shell somewhat fusiform, spire acuminate, whorls nine in number, very closely and finely sculptured with rib-like striæ, last whorl impressed in the middle and expanded at the base, columella twisted, attenuately truncated; transparent-white, obliquely painted with scattered chestnut streaks.

ADAMS, Pro. Boston Nat. Hist. Soc., 1845, p. 14.

Hab. Jamaica.

The compressed growth of the last whorl has very much the appearance of an accidental distortion.

Species 65. (Mus. Cuming.)

ACHATINA RANGIANA. *Achat. testā elongato-turritā, crassā, solidā, anfractibus undecim, plano-convexis, subtilissimè arcuatim striatis, lineis impressis spiralibus subdistantibus obscurè notatis, columellā simplici, callosā, vix truncatā, aperturā parvā; albido-stramineā.*

RANG'S ACHATINA. Shell elongately turreted, thick, solid, whorls eleven in number, flatly convex, very finely arcuately striated, obscurely marked with rather distant impressed spiral lines, columella simple, callous, scarcely truncated, aperture small; whitish straw-colour.

PFEIFFER, Pro. Zool. Soc., 1846, p. 115.

Hab. Republic of Mexico; Linden.

A shell of peculiarly solid growth verging on *Bulimus*, allied to the elongately turreted group of that genus of which *B. calcareus* is the type.

Species 66. (Mus. Cuming.)

ACHATINA TORTILLANA. *Achat. testā subfusiformi-oblongā, subventricosā, anfractibus septem, subtilissimè et creberrimè costulato-striatis, columellā contortā et attenuatè truncatā; lutescente-corneā, pellucidā, quasi vitreā.*

THE TORTILLA ACHATINA. Shell somewhat fusiformly

oblong, rather ventricose, whorls seven in number, very finely and closely rib-like striated, columella twisted and attenuately truncated; yellowish horny, transparent, as though glassy.

PFEIFFER, Pro. Zool. Soc., 1846, p. 32.

Hab. Tortilla, Central America.

The opaque blotches and streaks described by Dr. Pfeiffer, appear to be merely accidental in the individual specimen.

Species 67. (Mus. Cuming.)

ACHATINA ASSIMILIS. *Achat. testā oblongā, apice sub-obtusā, anfractibus sex, lævibus, politis, e suturis subtilissimè impresso-striatis, supernè tenuimarginatis, columellā breviter reflexā, aperturā oblongā; vividè pellucido-corneā.*

THE ALLIED ACHATINA. Shell oblong, rather obtuse at the apex, whorls six in number, smooth, polished, very finely impressly striated at the sutures, thinly margined round the upper part, columella shortly reflected, aperture oblong; bright transparent horny.

Hab. — ?

This approaches very closely to the *A. obtusa*, Sp. 62, but is of more transparent texture, whilst the columella is less abruptly truncated. The shell is composed of a whorl less in number, and the spire is shorter.

Species 68. (Mus. Cuming.)

ACHATINA HUGELI. *Achat. testā pyramidali-oblongā, anfractibus decem, rotundatis, supernè subtilissimè arcuatim striatis, ad suturas minutè marginatis, columellā valdè arcuatā et contortā, aperturā parvā; pellucido-albicante, hyalinā, epidermide tenui corneā lutescente.*

HUGEL'S ACHATINA. Shell pyramidally oblong, whorls ten in number, rounded, very finely arcuately striated at the upper part, minutely margined at the sutures, columella much arched and twisted, aperture small; transparent whitish, hyaline, with a thin yellowish horny epidermis.

PFEIFFER, Symbolæ, vol. ii. f. 58.

Hab. — ?

A neat hyaline species of pyramidal growth, marked with delicate covered striæ round the upper part of the whorls, which become fainter as the shell approaches maturity.



ACHATINA.

PLATE XVI.

Species 69. (Mus. Cuming.)

ACHATINA ERECTA. *Achat. testā subelongato-turritā, solidiusculā, apice obtusā, anfractibus octo, convexis, arcuatim striatulis, suturis impressis, columellā contortā, attenuatè truncatā, aperturā parvā, subrotundatā; sordidè fulvescente.*

THE ERECT ACHATINA. Shell somewhat elongately turreted, rather solid, obtuse at the apex; whorls eight in number, convex, finely arcuately striated, sutures impressed, columella twisted, attenuately truncated, aperture small, rather rounded; dull fulvous colour.

BENSON, Ann. and Mag. Nat. Hist., vol. ix. p. 487.

Hab. China.

Mr. Benson notices this species as inhabiting the island of Chusan and environs of Macao, and M. Largilliert has received it from Nanking.

Species 70. (Mus. Cuming.)

ACHATINA VIVIPARA. *Achat. testā elongato-turritā, suturis impressis, anfractibus decem, creberrimè subtilissimè costulato-striatis, ultimo basi subangulato, columellā tenuiculā, contortā, attenuatè truncatā, aperturā parvā; pellucido-stramineā.*

THE VIVIPAROUS ACHATINA. Shell elongately turreted, sutures impressed, whorls ten in number, very closely sculptured with fine rib-like striæ, last whorl slightly angled at the base, columella rather thin, twisted, attenuately truncated, aperture small; transparent straw-colour.

SOWERBY, Malac. and Conch. Mag., vol. i. p. 27.

Hab. — ?

Though of delicate transparent texture, this shell is of rather solid growth, the whorls rounded and aperture small.

Species 71. (Mus. Cuming.)

ACHATINA FRASERI. *Achat. testā subulato-turritā, apice obtusā, subpapillari, anfractibus decem ad undecim, plano-convexis, levibus, ad suturas subtilissimè plicato-crenulatis, columellā arcuatā, abruptè truncatā; fulvescente-albā, epidermide corneā, olivaceā, obscurè fusco-strigatā indutā.*

FRASER'S ACHATINA. Shell subulately turreted, apex obtuse, rather papillary, whorls ten to eleven in

number, flatly convex, smooth, very finely plicately crenulated at the sutures, columella arched, abruptly truncated; pale fulvous white, covered with an olive horny epidermis, obscurely streaked with brown.

PFEIFFER, Symbolæ, vol. iii. p. 90.

Hab. Banks of the river Nun, Africa.

Dr. Pfeiffer quotes as synonymous with this species, on the authority of a label in Mr. Cuming's cabinet, *A. involutus*, Gould, from Cape Palmas.

Species 72. (Mus. Cuming.)

ACHATINA CLAVATA. *Achat. testā acuminato-turritā, anfractibus decem, creberrimè subtiliter costulatis, costulis apicem versus remotioribus, columellā subcontortā, abruptè truncatā; albidā, epidermide sordidè stramineā indutā.*

THE CLAVATE ACHATINA. Shell acuminately turreted, whorls ten in number, very closely finely ribbed, ribs more distant towards the apex, columella slightly twisted, abruptly truncated; whitish, covered with a dull straw-coloured epidermis.

GRAY, Loudon's Magazine, New Series, vol. i. p. 487.

Hab. Sierra Leone.

It is a character to be observed in this species, that the delicate longitudinal ribs are rather distant on the first few whorls of the shell, and become gradually finer and closer towards the aperture.

Species 73. (Mus. Cuming.)

ACHATINA SEMITARUM. *Achat. testā subulatā, tenuissimā, apice subpapillari, anfractibus novem ad decem, planulatis, subtilissimè superficialiter striatis, nitidis supernè marginatis, columellā arcuatā, attenuatè truncatā, aperturā suboblongā; pellucido-corneā.*

THE WINDING-PATH ACHATINA. Shell subulate, very thin, somewhat papillary at the apex, whorls nine to ten in number, flattened, very finely superficially striated, shining, margined round the upper part, columella arched, attenuately truncated, aperture rather oblong; transparent horny.

Helix semitarum, Rang, Pfeiffer, Symbolæ, vol. ii. p. 59.

Hab. West Indies.

The sutural margin of the whorls is characterized by a

May, 1849.

delicate spiral cord, which Dr. Pfeiffer does not appear to have remarked.

Species 74. (Mus. Cuming.)

ACHATINA STRIATELLA. *Achat. testā subulato-turritā, tenui, anfractibus decem, creberrimè et subtilissimè costulato-striatis, ultimo obscurè angulato, subproducto, columellā tenui, contortā, attenuatè truncatā, aperturā parvā, oblongo-ovatā; pellucido-corneā.*

THE FINELY STRIATED ACHATINA. Shell subulately turreted, thin, whorls ten in number, very closely sculptured with fine ribs, last whorl obscurely angled and slightly produced, columella thin, twisted, attenuately truncated, aperture small, oblong-ovate; transparent horny.

Helix striatella, Rang, Annales Sci. Nat. vol. xxiv. p. 38. pl. 3. f. 7.

Hab. Prince's Island, West Africa; Rang.

The sculpture of this shell is not unlike the *Achatina vipara*, which is of a stouter texture and less subulate form.

Species 75. (Mus. Cuming.)

ACHATINA CLAVUS. *Achat. testā acuminato-oblongā, sub-Pupæformi, solidiusculā, anfractibus novem ad decem, plano-convexis, exilissimè arcuatè striatis, columellā arcuatā, aperturā parviusculā; sordidè olivaceā, epidermide tenui corneā brunnescente indutā.*

THE NAIL ACHATINA. Shell acuminate oblong, somewhat Pupa-shaped, rather solid, whorls nine to ten in number, flatly convex, very delicately striated in a curved direction, columella arched, aperture rather small; dull olive, covered with a thin brownish epidermis.

PFEIFFER, Symbolæ, vol. iii. p. 90.

Hab. — ?

This species has a much more solid appearance than the rest of the group.

Species 76. (Mus. Cuming.)

ACHATINA TENUISPIRA. *Achat. testā elongato-turritā, suturis subprofundè impressis, anfractibus undecim, tenuissimè elevato striatis, columellā valdè arcuatā; pellucido-corneā.*

THE THIN SPIRE ACHATINA. Shell elongately-turreted, sutures rather deeply impressed, whorls eleven in number, very finely elevately striated, columella much arched; transparent horny.

BENSON, Journ. Asiatic Soc., 1836, vol. v. p. 353.

Hab. Darjeeling, Sikkim-Himalaya.

A delicate transparent species from the locality in which Dr. Hooker is at this moment occupied in his natural history researches.

Fig. 77. (Mus. Cuming.)

For description of this species, see *Bulimus*, Pl. LXX. For *Achatina*, Sp. 77, see Pl. XXI.

Species 78. (Mus. Cuming.)

ACHATINA PAXILLUS. *Achat. testā subulatā, subfusiformi, solidiusculā, basi rotundatā, anfractibus novem, subplano-convexis, obliquè tenuistriatis, columellā arcuatā, subcontortā, aperturā parvā; albidā, epidermide tenui corneā luteo-olivaceā indutā.*

THE PEG ACHATINA. Shell subulate, somewhat fusiform, rather solid, rounded at the base, whorls nine in number, rather flatly convex, obliquely finely striated, columella arched, slightly twisted, aperture small; whitish, covered with a thin horny yellowish-olive epidermis.

Hab. — ?

This is rather a stout shell, peculiarly rounded at the base. In other respects it approaches very closely to *A. clavus*.

Achatina, Pl. XVII.



79



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87



88

ACHATINA.

PLATE XVII.

Species 79. (Mus. Cuming.)

ACHATINA JAVANICA. *Achat. testā oblongo-turritā, anfractibus octo, rotundatis, obscure subtilissimè rudè striatis, columellā tenui, attenuatè truncatā, aperturā parvā; pallidè stramineā.*

THE JAVA ACHATINA. Shell oblong-turreted, whorls eight in number, rounded, obscurely very finely rudely striated, columella thin, attenuately truncated, aperture small; pale straw-colour.

Hab. Java.

Characterized in some measure by a delicate waxen appearance.

Fig. 80. (Mus. Cuming.)

The shell here represented proves to be a variety of *A. striatella*, a species varying much in growth, but always well characterized by its delicate close-set rib-like striæ.

For *Achatina*, Sp. 80. see Pl. XXI.

Fig. 81. (Mus. Cuming.)

For description of this species, see *Bulimus*. Pl. LXX.

For *Achatina*, Sp. 81. see Pl. XXI.

Species 82. (Mus. Benson.)

ACHATINA AMENTUM. *Achat. testā cylindraco-turritā, tenuissimā, anfractibus novem, rotundatis, obscure subtilissimè plicato-striatis, columellā arcuatā et contortā, attenuatè truncatā; pellucido-corneā.*

THE THONG ACHATINA. Shell cylindrically turreted, very thin, whorls nine in number, rounded, obscurely very finely plicately striated, columella arched and twisted, attenuately truncated; transparent horny.

BENSON, MSS.

Hab. Howrah, near Calcutta.

For this species I am indebted to Mr. Benson, who relates having taken three specimens alive in 1835, from beneath a fallen palm tree at Howrah, near Calcutta; and he is not aware that it has been collected since.

Species 83. (Mus. Cuming.)

ACHATINA ARCUATA. *Achat. testā subulatā, anfractibus*

octo, planulatis, lævibus, politis, striis subtilibus remotiusculis impressis longitudinaliter exsculptis, columellā arcuatā, abruptè truncatā; pellucido-lacteā, strigis castaneis perpaucis angustis ornatā.

THE ARCHED ACHATINA. Shell subulate, whorls eight in number, flattened, smooth, polished, engraved with rather distant fine impressed longitudinal striæ, columella arched, abruptly truncated; transparent cream-colour, ornamented with a few narrow chestnut streaks.

PFEIFFER, Pro. Zool. Soc., 1835. p. 138.

Hab. Jamaica; Gosse.

A bright polished species, delicately grooved here and there longitudinally.

Species 84. (Mus. Cuming.)

ACHATINA OCTONA. *Achat. testā subulato-turritā, suturis impressis, anfractibus octo ad decem subrotundatis, minutissimè striatis, nitentibus, columellā arcuatā, contortā, parum truncatā, aperturā minimā; pellucido-cereā, pallidè stramineā.*

THE EIGHT-WHORLED ACHATINA. Shell subulately turreted, sutures impressed, whorls eight to ten in number, somewhat rounded, very minutely striated, shining, columella arched, twisted, but little truncated, aperture very small; transparent waxen, pale straw-colour.

GRAY, Annals of Philosophy, New Series, vol. ix. p. 414.

Helix octona, Chemnitz.

Bulimus octonus, Lamarck.

Hab. West Indies, South America, Pacific Islands.

This species, for which others have frequently been mistaken, may be distinguished by its delicate shining surface and very transparent texture; the sutures of the spire are also peculiarly impressed, giving a globose form to the whorls. It has a very wide range of habitation, and is composed sometimes of eight, sometimes of ten whorls.

Species 85. (Mus. Benson.)

ACHATINA CASSIACA. *Achat. testā elongato-subulatā, apice subpapillari, anfractibus quatuordecim ad quindecim, planulatis, obliquè creberrimè subrudè costulato-striatis, suturis impressis, columellā arcuatā, abruptè truncatā; albidā, epidermide tenui olivaceo-fuscā indutā.*

June, 1849.

THE CASSIA ACHATINA. Shell elongately subulate, apex somewhat papillary, whorls fourteen to fifteen in number, flat, obliquely very closely and somewhat rudely sculptured with rib-like striæ, sutures impressed, columella arched, abruptly truncated; whitish, covered with a thin olive-brown epidermis.

BENSON, MSS.

Hab. Cassia Hills, North East Frontier of Bengal; Dr. Griffith.

The rib-like striæ of this fine species, contributed by Mr. Benson, have an oblique plicate growth.

Species 86. (Mus. Cuming.)

ACHATINA SULCATA. *Achat. testâ elongato-turritâ, anfractibus decem, obliquè creberrimè costulato-striatis, anfractu ultimo basi angulato, infra angulum striis minus prominentibus, columellâ arcuatâ et contortâ, parum truncatâ; virente-stramineâ,*

THE GROOVED ACHATINA. Shell elongately turreted, whorls ten in number, obliquely very closely striated after the manner of fine ribs, last whorl angled at the base, striæ beneath the angle less prominent, colu-

mella arched and twisted, but little truncated; greenish straw-colour.

GRAY, Annals of Philosophy, New Series, vol. ix. p. 415.

Hab. West Indies.

I much doubt if the *A. striatella* of Rang is not a variety of this species, although the striæ are finer and closer together.

Fig. 87. (Mus. Cuming.)

The shell here represented illustrates another form of *A. striatella*, in which the columella is shorter and of more callous substance.

Fig. 88. (Mus. Cuming.)

This shell, an authentic specimen of Dr. Gould's *A. involuta*, from Cape Palmas, proves to be identical with *A. Fraseri*.

For Achatina Sp. 87 and 88, see Pl. XXI.

Achatina, Pl. XVIII.



90.



89.



91.



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93.



94.



95.



96.



97.



98.

ACHATINA.

PLATE XVIII.

Species 89. (Mus. Cuming.)

ACHATINA SUBULATA. *Achat. testā cylindraceo-oblongā, spirā subexsertā, anfractibus sex ad septem, lævibus, nitidis, supremis convexiusculis, reliquis sub-planulatis, columellā angustè truncatā, aperturā parviusculā, oblongā; pellucido-corneā, lineā spirali opacā sub-obscurā infra suturas.*

THE SUBULATE ACHATINA. Shell cylindrically oblong, spire rather exserted, whorls six to seven in number, smooth, shining, the uppermost whorls rather convex, the lower a little flattened, columella narrowly truncated, aperture rather small, oblong; transparent horny, with a somewhat obscure spiral opaque line beneath the sutures.

PFEIFFER, (*Polyphemus*) Wiegman's Archiv. 1839, vol. i. p. 352.

Glandina subulata, Philippi.

Helix orysaca, Rang.

Achatina orysacea, D'Orbigny.

Hab. Cuba.

Distinguished from its allied species by a more oblong-cylindrical growth.

Species 90. (Mus. Cuming.)

ACHATINA INCERTA. *Achat. testā oblongā, spirā obtusiusculā, anfractibus quinque ad sex, subplanulatis, lævibus, nitidis, supernè exiliter marginatis, columellā conspicuè truncatā, aperturā oblongā, supernè angustatā; pellucido-corneā.*

THE DOUBTFUL ACHATINA. Shell oblong, spire somewhat obtuse, whorls six in number, rather flattened, smooth, shining, faintly margined round the upper part, columella conspicuously truncated, aperture oblong, narrowed at the upper part; transparent horny.

Hab. — ?

Of a transparent horny substance, very like *A. solidula*, from which it differs in being more ventricose towards the base.

Species 91. (Mus. Cuming.)

ACHATINA CYLINDRACEA. *Achat. testā cylindraceo-ovatā, tenuiculā, spirā brevissimā, conoideā, anfractibus quin-*

que, convexo-planis, lævibus, politis, columellā excavatā, lirā callosā angustā basi conspicuè marginatā, aperturā supernè elongatā et angustatā, pellucido-corneā.

THE CYLINDRICAL ACHATINA. Shell cylindrically ovate, rather thin, spire very short, conoid, whorls five in number, convexly flattened, smooth, polished, columella excavated, conspicuously edged at the base with a narrow callous ridge, aperture elongate and narrowed at the upper part; transparent horny.

PFEIFFER, Pro. Zool. Soc. 1846. p. 31.

Hab. Tortilla, Central America.

The structure of this species is similar to that of the *A. Lattrei*, in which the columella instead of being truncated turns up at the edge, as in the present species, into a callous ridge.

Species 92. (Mus. Cuming.)

ACHATINA SOLIDULA. *Achat. testā cylindraceo-oblongā, spirā brevi, anfractibus quinque ad sex, subplanulatis, lævibus, politis, supernè exiliter marginatis, columellā brevī, arcuatā, abruptè truncatā, aperturā oblongā, supernè angustatā; pellucido-corneā.*

THE RATHER-SOLID ACHATINA. Shell cylindrically oblong, spire short, whorls five to six in number, rather flattened, smooth, polished, faintly margined at the upper part, columella short, arched, abruptly truncated, aperture oblong, narrowed at the upper part; transparent horny.

PFEIFFER, Wiegman's Archiv. 1840, vol. i. p. 252.

Glandina solidula, Philippi.

Hab. Cuba.

A bright transparent shell of rather stouter growth than most of this group.

Species 93. (Mus. Cuming.)

ACHATINA PORTO-RICENSIS. *Achat. testā oblongo-turritā, anfractibus octo, convexis, lævibus, politis, lineis impressis longitudinalibus subobscure exsculptis, columellā arcuatā, abruptè truncatā, aperturā parviusculā; cinerascendo-corneā, strigis saturatioribus ornatā.*

THE PORTO-RICO ACHATINA. Shell oblong-turreted, whorls eight in number, convex, smooth, polished, rather obscurely sculptured with impressed longitudinal lines, columella arched, abruptly truncated,

aperture rather small; pale ash horn-colour, ornamented with darker stripes.

PFEIFFER, Monog. Helic. viv. vol. ii. p. 258.

Hab. Island of St. John, Porto Rico.

There is a peculiarity of form, as well as of colour, in this species.

Species 94. (Mus. Cuming.)

ACHATINA CURVILABRIS. *Achat. testā fusiformi, spirā acuminatā, anfractibus octo, creberrimè costulato-striatis, ad suturas marginatis, columellā contortā, basi subproductā et truncatā, labro medio impresso; pellucido-corneā, strigis angustis albidis obscurè notatā, labii limbo albido.*

THE CURVED-LIP ACHATINA. Shell fusiform, spire acuminate, whorls eight in number, very closely sculptured with rib-like striæ, margined at the sutures, columella twisted, somewhat produced and truncated at the base; transparent horny, obscurely marked with narrow whitish streaks, edge of the lip whitish.

PFEIFFER, (*Glandina*), Pro. Zool. Soc., 1845, p. 137.

Hab. Jamaica; Gosse.

Belonging to the group typified by the *A. leucozonias*, the shell is marked in like manner by white streaks deposited at intervals by the lip after the fashion of varices.

Fig. 95. (Mus. Cuming.)

For description of this species see *Bulimus*, Pl. LXX.

For *Achatina*, Sp. 95. see Pl. XXI.

Species 96. (Mus. Cuming.)

ACHATINA FUNCKI. *Achat. testā ovato-conicā, subumbilicatā, tenui, anfractibus sex, subrotundatis, striatulis, nitidis, anfractu ultimo lirā callosā, aperturam intrante, prope medium munito, columellā lamellato-truncatā; pellucido-albā, diaphanā.*

FUNCK'S ACHATINA. Shell ovately conical, slightly umbilicated, thin, whorls six in number, rather rounded, very delicately striated, shining, last whorl furnished about the middle with a callous plait entering the aperture, columella flatly truncated; transparent white, diaphanous.

PFEIFFER, Pro. Zool. Soc., 1847, p. 232.

Hab. Province of Merida, New Granada.

A very transparent wax-like shell, intermediate between *Bulimus* and *Achatina*; the columella, although truncated, is slightly reflected back forming a small umbilicus. On the middle of the body-whorl is a very characteristic callous ridge, entering the aperture.

Species 97. (Mus. Cuming.)

ACHATINA LAMELLATA. *Achat. testā ovato-conicā, tenui, subventricosā, minutè umbilicatā, anfractibus sex, hic illic sublamellato-striatis, columellā subreflexā et truncatā, lirā parvā callosā, obscurā, prope medium intrante, munitā; pellucido-albā, diaphanā.*

THE LAMELLATED ACHATINA. Shell ovately conic, thin, rather ventricose, minutely umbilicated, whorls six in number, here and there slightly lamellately striated; columella a little reflected and truncated, furnished with an obscure callous ridge entering near the middle; transparent white, diaphanous.

POTIEZ and MICHAUD, Gal. de Douai, p. 128. pl. 11. f. 7 and 8.

Hab. New Lima; Latre.

This species, it will be seen, differs little from the preceding except in being rather more ventricose. The locality, to judge from analogy, is equally doubtful.

Species 98. (Mus. Cuming.)

ACHATINA CONIFERA. *Achat. testā pyramidal-conicā, anfractibus octo, subangustis, rotundatis, longitudinaliter obscurè striatis, nitidis, columellā brevi, arcuatā, contortā, attenuatè truncatā, aperturā parvā; fusco-corneā.*

THE CONICAL ACHATINA. Shell pyramidally conical, whorls eight in number, rather narrow, rounded, longitudinally obscurely striated, shining, columella short, arched, twisted, attenuately truncated, aperture small; brown-horny.

FERUSSAC, — ?

Hab. Juan Fernandez.

Distinguished by its small aperture and by the elevated growth of the spire.

Achatina Pl. XIX.



99.



100.



101.



102.



103.



104.



105.



106.



107.



108.

ACHATINA.

PLATE XIX.

(Figures magnified to twice the natural size.)

Species 99. (Mus. Cuming.)

ACHATINA DYSONI. *Achat. testā cylindraceo-oblongā, tenui, basin versus subdilatatā, spirā brevi, anfractibus quinque, lævibus, politis, columellā contortā, lirā callosā marginatā, aperturā oblongā, medio subcontractā; pellucido-corneā.*

DYSON'S ACHATINA. Shell cylindrically oblong, thin, slightly dilated towards the base, spire short, whorls five in number, smooth, polished, columella twisted, edged with a callous ridge, aperture oblong, somewhat contracted in the middle; transparent horny.

PFEIFFER, Pro. Zool. Soc. 1846, p. 32.

Hab. Honduras, (under decayed leaves); Dyson.

The columella of this delicate transparent species is not truncated at the base, but edged with a callous ridge.

Species 100. (Mus. Cuming.)

ACHATINA SPLENDIDA. *Achat. testā acuminato-ovatā, tenui, striatulā, nitidā, anfractibus sex ad septem, subrotundatis, columellā brevi, contortā, subcallosā, vix reflexā; pellucido-corneā.*

THE SPLENDID ACHATINA. Shell acuminate ovate, thin, finely striated, shining, whorls six to seven in number, subrotund, columella short, twisted, rather callous, scarcely reflected; transparent horny.

ANTON, Verz. p. 44. Philippi, Abbild. *Achat.* p. 1. f. 11.

Hab. Island of Juan Fernandez.

A small bright transparent horny shell, in which the columella is frequently turned up at the edge into a callous ridge.

Species 101. (Mus. Cuming.)

ACHATINA ACCINCTA. *Achat. testā conico-ovatā, tenui, anfractibus sex, subplano-convexis, e suturis arcuatim striatis, columellā contortā, plicato-truncatā, aperturā parviusculā; pellucido-corneā.*

THE GIRDED ACHATINA. Shell conically ovate, thin, whorls six in number, somewhat flatly convex, arcuately striated from the sutures, columella twisted, plicately truncated, aperture rather small; transparent horny.

MIGHELS, Pro. Nat. Hist. Soc. Boston, 1845, p. 20.

Achatina Sandwicensis, Pfeiffer.

Hab. Sandwich Islands.

Dr. Pfeiffer notices that this group of *Achatina* is allied to the *Achatinellæ*; it should be observed that they are of very different substance and texture.

Fig. 102. (Mus. Cuming.)

For description, see Genus *Tornatellina*.

For *Achatina*, Sp. 102, see Pl. XXI.

Species 103. (Mus. Cuming.)

ACHATINA BULIMOIDES. *Achat. testā ventricosovovatā, spirā subacuminatā, anfractibus quinque ad sex, subrotundatis, columellā tenui, contortā, aperturā suborbiculari; corneā, epidermide luteo-olivaceā indutā.*

THE BULIMUS-LIKE ACHATINA. Shell ventricosely ovate, spire somewhat acuminate, whorls five to seven in number, rather rounded, columella thin, twisted, aperture nearly orbicular; horny, covered with a yellowish-olive epidermis.

PFEIFFER, Pro. Zool. Soc. 1846, p. 116.

Hab. Island of Juan Fernandez.

A delicately formed species, covered with a thin yellowish-olive horny epidermis.

Species 104. (Mus. Cuming.)

ACHATINA CONSIMILIS. *Achat. testā conico-ovatā, subventricosā, anfractibus quinque ad sex, subplano-convexis, striatulis, nitidis, columellā brevi, rectā, subcallosā; luteo-olivaceā, pellucidā.*

THE VERY SIMILAR ACHATINA. Shell conically ovate, rather ventricose, whorls five to six in number, rather flatly convex, finely striated, shining, columella short, straight, rather callous; yellowish-olive, transparent.

Hab. Juan Fernandez; Miller.

Very similar in general aspect to the preceding species, but clearly distinct; it is less ventricose and the columella is nearly straight.

Species 105. (Mus. Cuming.)

ACHATINA OROPHILA. *Achat. testâ conico-ovatâ, spirâ acuminatâ, suturis impressis, anfractibus septem, rotundatis, peculiariter obscure indentatis, columellâ brevi, valdè arcuatâ et truncatâ, aperturâ parviusculâ; olivaceo-corneâ.*

THE THATCHED ACHATINA. Shell conically ovate, spire acuminate, sutures impressed, whorls seven in number, rounded, peculiarly obscurely indented, columella short, deeply arched and truncated, aperture rather small; olive-horn.

BENSON, MSS.

Hab. Neilgherry Hills, India; Jerdon. Colombo, Ceylon; Templeton.

Distinguished by the deeply arched curvature of the columella, and by the whorls being rather more numerous than is usual in species of this form.

Species 106. (Mus. Cuming.)

ACHATINA CONCENTRICA. *Achat. testâ acuminato-ovatâ, anfractibus sex, concentricè plicato-striatis, columellâ brevi, contortâ, abruptè truncatâ, supernè lirâ callosâ munitâ, aperturâ parviusculâ; corneâ, sordidè olivaceâ.*

THE CONCENTRIC ACHATINA. Shell acuminate ovate, whorls six in number, concentrically plicately striated, columella short, twisted, abruptly truncated, furnished at the upper part with a callous ridge, aperture rather small; horny, dull olive.

Hab. Bolivia, (under dead Cacti); Bridges.

Finely sculptured by numerous arched concentric striæ, whilst the body-whorl is furnished with a winding callous ridge.

Species 107. (Mus. Cuming.)

ACHATINA LAMELLOSA. *Achat. testâ acuminato-ovatâ, anfractibus sex, subrotundatis, subtilissimè concentricè plicato-lamellatis, columellâ contortâ, subtruncatâ, lirâ parvâ supernè munitâ; pellucido-corneâ.*

THE LAMELLOSE ACHATINA. Shell acuminate ovate, whorls six in number, somewhat rounded, very finely concentrically plicately lamellated, columella twisted, slightly truncated, furnished at the upper part with a small ridge; transparent horny.

MORICAND, — ?

Hab. — ?

A very transparent shell, most delicately concentrically lamellated.

Species 108. (Mus. Cuming.)

ACHATINA ANOMALA. *Achat. testâ turritâ, minutâ, umbilicatâ, spiræ suturis impressis, anfractibus septem ad octo, rotundatis, striatulis, columellâ brevi, callosâ, reflexâ, aperturâ parvâ; sordidè albicante.*

THE ANOMALOUS ACHATINA. Shell turreted, minutely umbilicated, sutures of the spire impressed, whorls seven to eight in number, rounded, finely striated, columella short, callous, reflected, aperture small; dull whitish.

PFEIFFER, *Symbolæ*, vol. iii. p. 89. Philippi, *Abbild. Achat.* pl. 1. f. 12.

Hab. Peru.

A small turreted shell, with the sutures of the spire rather deeply impressed, verging very closely on *Bulimus* by reason of the reflected growth of the columella.



109.



110.



111.



112.



113.



115.



114.



116.



117.



118.

ACHATINA.

PLATE XX.

Species 109. (Mus. Benson.)

ACHATINA BALANUS. *Achat. testâ cylindraceo-oblongâ, subfusiformi, anfractibus quatuor, lævibus, nitidis, apice obtuso, columellâ arcuatâ, truncatâ, aperturâ parvâ; sordidè albâ.*

THE BARNACLE ACHATINA. Shell cylindrically oblong, somewhat fusiform, whorls four in number, smooth, shining, apex obtuse, columella arched, truncated, aperture small; dull white.

BENSON, MSS.

Hab. Banks of the Jumna, India.

A very minute species, allied to the following, but composed of fewer whorls. First collected by Mr. Benson in 1825 on the banks of the river Jumna near Hameerpore, Bundelkhund, among the roots of a large fallen tree; subsequently on a porphyritic hill on the border of the desert south of Hawee. It occurs also at Agra, on the right bank of the Jumna.

Species 110. (Mus. Cuming.)

ACHATINA ABERRANS. *Achat. testâ subulatâ, tenui, anfractibus sex, longitudinaliter impresso-striatis, columellâ tortuosâ, calloso-marginatâ, aperturâ parvâ; pellucidâ, vitreâ, strigis rufulis angustis obliquè pictâ.*

THE ABERRANT ACHATINA. Shell subulate, thin, whorls six in number, longitudinally impressly striated, columella twisted, callous at the edge, aperture small; transparent, glassy, obliquely painted with narrow reddish streaks.

PFEIFFER, Pro. Zool. Soc. 1845, p. 138.

Hab. Jamaica; Gosse.

A pretty little glassy shell, striped at rather distant intervals with red-brown lines.

Species 111. (Mus. Cuming.)

ACHATINA ACICULA. *Achat. testâ cylindraceo-subulatâ, subfusiformi, anfractibus sex, lævibus, politis, apice obtuso, columellâ arcuatâ, angustè truncatâ; albâ, diaphanâ.*

THE LITTLE NEEDLE ACHATINA. Shell cylindrically subulate, somewhat fusiform, whorls six in number, smooth, polished, apex obtuse, columella arched, narrowly truncated; white, diaphanous.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 304

Buccinum acicula, Müller.

Buccinum terrestre, Montagu.

Helix (*Cochlicopa*) *acicula*, De Férussac.

Bulimus acicula, Bruguière.

Achatina alba, Brown.

Cionella acicula, Jeffreys.

Acicula eburnea, Risso.

Hab. Europe, including the British Isles.

A light, shining, glassy shell, with a distinctly truncated columella.

Species 112. (Mus. Cuming.)

ACHATINA COSTULATA. *Achat. testâ turritâ, anfractibus octo, rotundatis, longitudinaliter costulatis, columellâ subrectâ, truncatâ, aperturâ parvâ; pellucido-corneâ, strigis rufo-fuscis irregulariter pictâ.*

THE DELICATELY-RIBBED ACHATINA. Shell turreted, whorls eight in number, rounded, longitudinally finely ribbed, columella nearly straight, truncated, aperture small; transparent horny, irregularly painted with red-brown streaks.

ADAMS, Pro. Nat. Hist. Soc. Boston, 1845, p. 13.

Achatina Adamsi, Pfeiffer.

Hab. Jamaica.

A finely ribbed, truncated shell, of a brownish horn-colour, streaked irregularly with darker brown.

Fig. 113. (Mus. Cuming.)

For description of this species, see *Bulimus*, Pl. LXX. For *Achatina*, Sp. 113, see Pl. XXI.

Species 114. (Mus. Cuming.)

ACHATINA GOSSEI. *Achat. testâ subulatâ, aciculari, anfractibus decem, subremotè costatis, costis basin versus gradatim evanidis, juxta suturas fortioribus, columellâ obliquè arcuatâ, vix truncatâ, aperturâ minutâ, subdilatatâ; sordidè albâ.*

GOSSE'S ACHATINA. Shell subulate, finely pointed, whorls ten in number, somewhat remotely ribbed, ribs gradually fading towards the base, stronger next the sutures, columella obliquely arched, scarcely truncated, aperture very small, rather dilated; dead white.

March, 1850.

PFEIFFER, Pro. Zool. Soc. 1845, p. 138.

Hab. Jamaica; Gosse.

An interesting delicately ribbed shell, distinguished by its sharp acicular form.

Species 115. (Mus. Cuming.)

ACHATINA CALIFORNICA. *Achat. testā cylindraceo-elongatā, anfractibus tredecim, obliquè creberrimè striatis, basin versus subangulato-planatis, ultimo basi acutè carinato, infra carinam peculiariter excavato, columellā valdè arcuatā, calloso-marginatā, aperturā parvā, subquadratā; cereo-albicante.*

THE CALIFORNIAN ACHATINA. Shell cylindrically elongated, whorls thirteen in number, obliquely very closely striated, rather angularly flattened towards the base, last whorl sharply keeled at the base, peculiarly excavated beneath the keel, columella very much arched, callous at the edge, aperture small, somewhat square; waxen white.

PFEIFFER, Symbolæ, vol. iii. p. 89.

Hab. Monterey, California.

This very remarkable species is mainly distinguished by the excavated and keeled growth of each whorl at the base.

Fig. 116. (Mus. Cuming.)

ACHATINA ACCINCTA. Already described and figured from a lighter specimen in the preceding plate, Sp. 101. For Sp. 116, see Pl. XXIII.

Fig. 117. (Mus. Cuming.)

ACHATINA LUBRICA. Referred to the genus *Bulimus*, Sp. 645. For Sp. 117, see Pl. XXIII.

Species 118. (Mus. Cuming.)

ACHATINA SUTURALIS. *Achat. testā oblongo-ovatā, spirā breviusculā, conicā, suturis impressis, anfractibus quinque, convexis, lævibus, politis, columellā subrectā, truncatā; corneā, solidiusculā, pellucidā.*

THE SUTURAL ACHATINA. Shell oblong-ovate, spire rather short, conical, sutures impressed, whorls five in number, convex, smooth, polished, columella nearly straight, truncated; horny, rather solid, transparent. *Polyphemus suturalis*, Pfeiffer, in Wiegman Archiv. 1839, p. 353.

Glandina suturalis, Philippi.

Hab. Cuba.

An oblong transparent polished shell, belonging to the group *Glandina* of Dr. Philippi.



80.



81. a.



81. b.



87.



88. a.



88. b.



95.



102. a.



102. b.



112.

ACHATINA.

PLATE XXI.

Species 77. (*Bulimus*, Fig. 572. Mus. Benson.)

ACHATINA EXULATA. *Achat. testā oblongā, subcylindrā, anfractibus sex ad septem, convexis, oblique subtiliter striatis, columellā arcuatā, subcontortā, obtusè truncatā, aperturā parviusculā, peculiariter effusā; pellucido-albā, opaco-albo sparsim variegatā.*

THE EXILED ACHATINA. Shell oblong, somewhat cylindrical, whorls six to seven in number, convex, obliquely finely striated, columella arched, somewhat twisted, obtusely truncated, aperture rather small, peculiarly effused; transparent white, sparingly mottled with opake white.

BENSON, MS.

Hab. St. Helena; Lieut. Lefroy.

Of a very distinct type from any other species of the genus.

Species 80. (Mus. Benson.)

ACHATINA JERDONI. *Achat. testā subpyramidal-oblongā, anfractibus septem ad octo, convexis, lævibus, politis, ad suturas subtiliter marginatis, columellā arcuatā, conspicuè truncatā, aperturā parvā; fusco-corneā.*

JERDON'S ACHATINA. Shell somewhat pyramidally oblong, whorls seven to eight in number, convex, smooth, polished, finely margined at the sutures, columella arched, conspicuously truncated, aperture small; brown horny.

BENSON, MS.

Hab. Nilgherries, Hindoostan; Jerdon.

A polished horny species, of rather narrow, pyramidal growth.

Species 81. (Mus. Benson.)

ACHATINA CRASSILABRIS. *Achat. testā subpyramidal-conicā, basin versus ventricosā, anfractibus octo, subrotundatis, ad suturas crenulatis, crenulis numerosis, confertis, in striis impressis descendentibus, columellā profundè arcuatā, conspicuè truncatā, aperturā parviusculā, labro subincrassato; corneo-fuscā.*

THE THICK-LIP ACHATINA. Shell somewhat pyramidally conical, ventricose towards the base, whorls eight in number, rather rounded, crenulated at the sutures, crenules numerous, close-set, descending in impressed striæ, columella deeply arched, conspicuously trun-

cated, aperture rather small, lip slightly thickened; horny brown.

BENSON, Journ. Asiat. Soc. 1836, vol. v. p. 353.

Hab. North-east Frontier of Bengal; Benson.

Distinguished by its rounded, conical form, finely impressed crenulated sculpture, and slightly thickened lip.

Species 87. (Mus. Benson.)

ACHATINA NILAGARICA. *Achat. testā pyramidal-turritā, anfractibus decem, convexis, ad suturas subtilissimè crenulatis, deinde striatis, columellā subprofundè arcuatā, aperturā parvā; fusco-corneā.*

THE NILGHERRY ACHATINA. Shell pyramidally turreted, whorls ten in number, convex, very finely crenulated at the sutures, then striated, columella rather deeply arched, aperture small; brown-horny.

BENSON, MS.

Hab. Nilgherries, Hindoostan; Jerdon.

Allied to the preceding species in detail of character, but amply distinguished by its more elongated pyramidal form.

Species 88. (Mus. Cuming.)

ACHATINA LINDONI. *Achat. testā cylindrā, utrinque attenuatā, solidulā, anfractibus octo, planulatis, lævigatis, lineis curvatis incrementi leviter impressis, ad suturas marginatis, duobus ultimis oblique descendentibus, columellā basi arcuatā, suprā gibbosā, aperturā angustā, supernè sinuatā; fulvo-corneā, politā, strigis castaneis arcuatis obscure tinctā.*

LINDON'S ACHATINA. Shell cylindrically oblong, attenuated at each end, rather solid, whorls eight in number, rather flattened, smooth, slightly impressed with curved lines of growth, margined at the sutures, the last two whorls descending obliquely, columella arched, gibbous above, aperture narrow, sinuated at the upper part; fulvous horny, polished, obscurely stained with arched chestnut streaks.

PFEIFFER, Pro. Zool. Soc. 1846, p. 116.

Hab. Cuba; Lindon.

Of a compressed cylindrical form, belonging to the *Glandina* type.

March, 1850.

Species 95. (Mus. Cuming.)

ACHATINA ISABELLINA. *Achat. testā fusiformi-oblongā, anfractibus sex, convexis, sub lente minutissimè decussatim striatis, ad suturas marginatis, columellā obliquā, sublatè truncatā, aperturā ovatā; pellucido-corneā, sordidè albicante.*

THE SOILED ACHATINA. Shell fusiformly oblong, whorls six in number, convex, very minutely decussately striated beneath the lens, margined at the sutures, columella oblique, rather broadly truncated, aperture ovate; transparent horny, dull whitish.

PFEIFFER, Pro. Zool. Soc. 1846, p. 31.

Hab. Mexico.

A shell of rather firm growth, though of transparent substance.

Species 102. (Mus. Benson.)

ACHATINA PERROTTETI. *Achat. testā pyramidal-conicā, anfractibus octo, rotundatis, lævibus, columellā subprofundè arcuatā, aperturā parvā; fusco-corneā.*

PERROTTET'S ACHATINA. Shell pyramidally conical, whorls eight in number, rounded, smooth, columella

rather deeply arched, aperture small; brownish horny.

PFEIFFER, Revue Zool. Cuv., 1842, p. 305.

Hab. Nilgherries, Hindoostan; Jerdon.

Very closely allied to *A. crassilabris*, from which it mainly differs in being of a rather more elongated form, and not impressly crenulated.

Species 113. (Mus. Benson.)

ACHATINA OREAS. *Achat. testā oblongo-conicā, anfractibus septem, convexis, ad suturas subtiliter marginatis, longitudinaliter obscure impresso-striatis, columellā arcuatā, aperturā parvā; fusco-corneā.*

THE MOUNTAIN-NYMPH ACHATINA. Shell oblong-conical, whorls seven in number, convex, finely margined at the sutures, longitudinally obscurely impressly striated, columella arched, aperture small; brown horny.

BENSON, MS.

Hab. Nilgherries, Hindoostan; Jerdon.

Another interesting species of the Nilgherry type, approaching to the form of *A. Jerdoni*.

Achatina, Pl. XXII.



116.



117.



119.



120.



121. a.



121. b.



122.



123. a.



123. b.



124.

ACHATINA.

PLATE XXII.

[Figures considerably magnified.]

Species 116. (Mus. Cuming.)

ACHATINA TRITICEA. *Achat. testā ovato-cylindraceutā, solidā, anfractibus sex, lævibus, politis, infra suturas lineā circumdatis, columellā plerumque biplicatā, vix truncatā, aperturā basi rotundatā et effusā, supernè leviter sinuatā; fulvescente-corneā.*

THE WHEAT-GRAIN ACHATINA. Shell ovately cylindrical, rather solid, whorls six in number, smooth, polished, surrounded with a line beneath the sutures, columella generally two-plaited, scarcely truncated, aperture rounded and effused at the base, slightly sinuated at the upper part; fulvous horny.

Helix triticea, Lowe, Faun. Mader. p. 90. pl. 6. f. 26.

Glandina triticea, Pfeiffer.

Hab. Porto Sancto, Madeira; Lowe.

This species, in which the columellar plaits are sometimes wanting, partakes of the character of the genus *Tornatellina*.

Species 117. (Mus. Cuming.)

ACHATINA GRACILIS. *Achat. testā acuminato-oblongā, anfractibus quinque, lævibus, politis, ad suturas subtiliter marginatis, columellā lævigatā, vix truncatā; pellucido-vitreā, virescente.*

THE SLENDER ACHATINA. Shell acuminately oblong, whorls five in number, smooth, polished, finely margined at the sutures, columella smooth, scarcely truncated; transparent glassy, greenish.

Helix gracilis, Lowe, Faun. Mader. p. 61. pl. 6. f. 28.

Hab. Porto Sancto, Madeira; Lowe.

A small transparent glassy species, very simply characterized.

Species 119. (Mus. Cuming.)

ACHATINA OVULIFORMIS. *Achat. testā oblongo-ovatā, anfractibus quatuor, lævibus, politis, suturis subimpressis, columellā tenuè biplicatā, obliquè truncatā; pellucido-vitreā, fuscescente.*

THE LITTLE EGG-SHAPED ACHATINA. Shell oblong-ovate, whorls four in number, smooth, polished, sutures rather impressed, columella thinly two-

plaited, obliquely truncated; transparent glassy, brownish.

Helix ovuliformis, Lowe, Faun. Mader. p. 61. pl. 6. f. 27.

Hab. Porto Sancto, Madeira; Lowe.

Less acuminate in form and browner in colour, whilst the columella is plaited, after the manner of *Tornatellina*.

Species 120. (Mus. Benson.)

ACHATINA CRASSULA. *Achat. testā pyramidaliconicā, anfractibus septem, plano-convexis, longitudinaliter impresso-striatis, suturis excavatis, columellā arcuatā, conspicuè truncatā, aperturā parvā; albidā, epidermide olivaceo-corneā indutā.*

THE THICKENED ACHATINA. Shell pyramidally conical, whorls seven in number, flatly convex, longitudinally impressly striated, sutures excavated, columella arched, conspicuously truncated, aperture small; whitish, covered with an olive horny epidermis.

BENSON, MS.

Hab. Himalaya.

Of more solid growth than the Nilgherry species of allied form, represented in the preceding plate.

Species 121. (Mus. Cuming.)

ACHATINA CORUSCA. *Achat. testā pyramidaliconicā, apice obtusā, anfractibus septem, convexis, lævibus, politis, ad suturas subtiliter marginatis, columellā arcuatā et contortā, aperturā ovatā; pellucido-fuscescente, vitreā, strigis castaneis flexuosis obscure tinctā.*

THE GLITTERING ACHATINA. Shell pyramidal, somewhat fusiform, obtuse at the apex, whorls seven in number, convex, smooth, polished, finely margined at the sutures, columella arched and twisted, aperture ovate; transparent brown, glassy, obscurely stained with flexuous chestnut streaks.

Hab. — ?

A shell of firm growth, though transparent and glassy.

Species 122. (Mus. Cuming.)

ACHATINA MELAMPOIDES. *Achat. testā oblongo-ovatā,*

March, 1850.

solidiusculā, spirā brevi, anfractibus sex, lævibus, suturis indistinctis, lineā circumdatis, columellā excavatā et contortā, parū truncatā, aperturā oblongā, supernè leviter sinuatā, basi peculiariter effusā; cinereo-fuscā, subolivaceā, columellā albā.

THE MELAMPUS-LIKE ACHATINA. Shell oblong-ovate, rather solid, spire short, whorls six in number, smooth, sutures indistinct, surrounded by a line, columella excavated and twisted, but little truncated, aperture oblong, slightly sinuated at the upper part, peculiarly effused at the base; ash-brown, olive tinged, columella white.

LOWE, MS.

Hab. Madeira.

A shell of rather solid growth, having the form of a *Melampus* or *Auricula*.

Species 123. (Mus. Benson.)

ACHATINA GEMMA. *Achat. testā oblongo-conicā, solidiusculā, anfractibus sex, rotundatis, lævibus, columellā arcuatā, abbreviatā, aperturā subrotundā; purpureo-nigricante, nitente.*

THE BUD ACHATINA. Shell oblong-conical, rather solid, whorls six in number, rounded, smooth, columella

arched, abbreviated, aperture nearly round; purple-black, shining.

BENSON, MS.

Hab. Barrackpore, Bengal; Benson, Bacon.

Of a much darker purple-black colour than any other of the Indian species, and of shorter growth, with a shining, polished surface.

Species 124. (Mus. Cuming.)

ACHATINA FRUMENTUM. *Achat. testā oblongo-conicā, solidiusculā, anfractibus sex, convexis, lævibus, columellā arcuatā et contortā, aperturā subrotundā; fulvo-spaldiceā.*

THE RYE-GRAIN ACHATINA. Shell oblong-conical, rather solid, whorls six in number, convex, smooth, columella arched and twisted, aperture nearly round; fulvous bay.

Hab. Chandpore, Bengal; Bacon.

This approaches very closely to the preceding species, yet there is a characteristic difference in the appearance of the shell, of which Mr. Cuming possesses many specimens. The whorls are less rounded, less polished, and of a uniform lighter colour.



126.



125.



126.3.



127.



128. a.



129.



128. b.

ACHATINA.

PLATE XXIII.

Species 125. (Mus. Taylor.)

ACHATINA MARMOREA. *Achat. testá elongato-turritá, angustá, subcylindraccá, solidiusculá, anfractibus plano-convexis, obliquè subrudè striatis, columellá tenuè truncatá, aperturá parvâ; albâ, epidermide corneâ castaneâ indutâ.*

THE MARBLE ACHATINA. Shell elongately turreted, narrow, somewhat cylindrical, rather solid, whorls flatly convex, obliquely rather rudely striated, columella thinly truncated, aperture small; white, covered with a chestnut horny epidermis.

Hab. —?

This species resembles the *Bulimus calcar* in form. It is of more solid growth, and has the columella distinctly truncated.

Species 126. (Mus. Cuming.)

ACHATINA MUCIDA. *Achat. testá ovatâ, tenui, subventricosâ, anfractibus sex, decussatim subtilissimè granuloso-striatis, supernè marginatis, et obscurè crenulatis, columellâ tenuissimè truncatâ; opaco-albo et purpureo-fusco strigatâ et variegatâ, epidermide tenui indutâ.*

THE MOULDY ACHATINA. Shell ovate, thin, rather ventricose, whorls six in number, decussately very finely granulosely striated, marginated round the upper part, and obscurely crenulated, columella very thinly truncated; streaked and variegated with opaque-white and purple-brown, covered with a thin epidermis.

Bulimus mucidus, Gould.

Hab. Liberia, West Africa.

A light, strongly painted shell, of which the colouring is seen through in the interior.

Species 127. (Fig. Guérin.)

ACHATINA SAULCYDI. *Achat. testá oblongo-ovatâ, ventricosâ, sinistrâ, apice subpapillari, anfractibus convexis, irregulariter rugoso-striatis, ad suturas crenulatis, columellâ subexcavatâ et truncatâ; violaceo-griseâ, nigricante-fusco longitudinaliter lineatâ et strigatâ, aperturæ fauce ferrugineo-fulvâ.*

SAULCYD'S ACHATINA. Shell oblong-ovate, ventricose, sinistral, somewhat papillary at the apex, whorls convex, irregularly roughly striated, crenulated at the sutures, columella slightly excavated and truncated; violet-grey, longitudinally streaked and lineated with blackish brown, aperture rusty-fulvous.

DE JOANNIS, Guérin's Mag. de Zool. 1834, Moll. pl. 50.

Hab. Prince's Island, West Africa.

I have not seen this species, but have ventured to copy the excellent figure of it in the work above referred to, on account of its characteristic appearance. The papillary type of the apex appears also in *Bulimus torridus*, from the neighbouring locality of Liberia.

Species 128. (Mus. Cuming.)

ACHATINA GOULDII. *Achat. testá ovato-conicâ, tenui, ventricosâ, apice subpapillari, anfractibus plano-convexis, obliquè tenuissimè striatis, ad suturas subtiliter crenulatis, anfractu ultimo basi leviter angulato; fulvescente-olivaceâ, epidermide tenui indutâ, epidermide secundâ hydrophanâ prope apicem radiatâ et infra angulum anfractûs ultimi unifasciatâ.*

GOULD'S ACHATINA. Shell ovately conical, thin, ventricose, somewhat papillary at the apex, whorls flatly convex, obliquely very finely striated, finely crenulated at the sutures, last whorl slightly angled at the base; fulvous-olive, covered with a thin epidermis, rayed at the apex with a second hydrophanous epidermis, and encircled with a single band of the same beneath the angle of the last whorl.

Bulimus balteatus, Gould.

Hab. Liberia, West Africa.

The name *balteatus* being already occupied in this genus, I have the pleasure of naming the species after the accomplished naturalist to whom I am indebted for it,—Dr. Gould, of Boston, United States.

Species 129. (Mus. Taylor.)

ACHATINA OBELISCUS. *Achat. testá elongato-turritâ, anfractibus novem ad decem, planis, medio subconcavis, transversim obscurè et irregulariter liris, anfractu ultimo basi obtusè angulato, columellâ arcuatâ et*

March, 1850.

truncatá; sordide fusco-albá, epidermide fulvescente-fuscá corneá indutá, anfractu ultimo circa columellam castaneo-nigricante fasciato.

THE OBELISK ACHATINA. Shell elongately turreted, whorls nine to ten in number, flattened, slightly concave in the middle, transversely obscurely and irregularly ridged, last whorl obtusely angled at the base, columella arched and truncated; dirty

brownish-white, covered with a horny fulvous-brown epidermis, last whorl banded with chestnut-black around the columella.

Hab. — ?

For this remarkable and very characteristic species I am indebted to the collection of Thomas Lombe Taylór, Esq.

ACHATINA.

	Plate.	Species.		Plate.	Species.
aberrans, <i>Pfr.</i>	XX.	110	cylindracea, <i>Pfr.</i>	XVIII.	91
accincta, <i>Mighels</i>	XIX.	101	<i>dactylus</i> , <i>Brod.</i>	VIII.	26
acicula, <i>Lamarck</i>	XX.	111	Dennisoni, <i>Reeve</i>	IX.	32
acuta, <i>Férussac</i>	III.	11	Dominicensis (<i>Helix</i>), <i>Fér.</i> . .	XIV.	56
<i>Adamsi</i> , <i>Pfr.</i>	XX.	112	Dysoni, <i>Pfr.</i>	XIX.	99
<i>adusta</i> , <i>Gould</i>	I.	4	erecta, <i>Benson</i>	XVI.	69
<i>æquatoria</i> , <i>Reeve</i>	I.	2	exulata, <i>Benson</i>	XXI.	77
alabaster (<i>Helix</i>), <i>Rang</i>	IX.	28	fasciata (<i>Bucc.</i>), <i>Müller</i>	X.	35
<i>alba</i> , <i>Brown</i>	XX.	111	flammigera, <i>Férussac</i>	XII.	39
<i>albolineata</i> , <i>Lamarck</i>	XIV.	52	Fraseri, <i>Pfr.</i>	XVI.	71
<i>Algira</i> , <i>Brug.</i>	XIII.	43	frumentum, <i>Reeve</i>	XXII.	124
<i>allisa</i> , <i>Reeve</i>	V.	16	fulica, <i>Férussac</i>	II.	8
amentum, <i>Benson</i>	XVII.	82	fulva (<i>Bulimus</i>), <i>Brug.</i>	III.	10
<i>amphora</i> , <i>Jay</i>	IV.	14	Funcki, <i>Pfr.</i>	XVIII.	96
<i>Anais</i> , <i>Lesson</i>	X.	35	fusco-lineata, <i>Lamarck</i>	XIV.	56
<i>anomala</i> , <i>Pfr.</i>	XIX.	108	fusiformis, <i>Pfr.</i>	IX.	31
<i>arcuata</i> , <i>Pfr.</i>	XVII.	83	gemma, <i>Benson</i>	XXII.	123
<i>assimilis</i> , <i>Reeve</i>	XV.	67	glabra (<i>Gland.</i>), <i>Pfr.</i>	XIV.	58
<i>balanus</i> , <i>Benson</i>	XX.	109	<i>glans</i> , <i>Lamarck</i>	XIV.	55
<i>balteata</i> , <i>Reeve</i>	II.	7	Gosseii, <i>Pfr.</i>	XX.	114
<i>bicarinata</i> (<i>Bulla</i>), <i>Dillw.</i> . . .	V.	17	Gouldii, <i>Reeve</i>	XXIII.	128
bicolor, <i>Jay</i>	I.	4	gracilis, <i>Lowe</i>	XXII.	117
<i>Bulimoides</i> , <i>Pfr.</i>	XIX.	103	Griffithsii, <i>Adams</i>	XV.	64
<i>Californica</i> , <i>Pfr.</i>	XX.	115	Hugeli, <i>Pfr.</i>	XV.	68
<i>carinata</i> , <i>Pfr.</i>	VII.	24	incerta, <i>Reeve</i>	XVIII.	90
<i>Cassiaca</i> , <i>Benson</i>	XVII.	85	indotata, <i>Reeve</i>	VI.	18
<i>Ceylanica</i> , <i>Pfr.</i>	XV.	59	isabellina, <i>Pfr.</i>	XXI.	95
<i>clavata</i> , <i>Gray</i>	XVI.	72	Jamaicensis, <i>Pfr.</i>	XV.	61
<i>clavus</i> , <i>Pfr.</i>	XVI.	75	Javanica, <i>Reeve</i>	XVII.	79
<i>cochlea</i> , <i>Reeve</i>	I.	5	Jerdoni, <i>Benson</i>	XXI.	80
<i>columna</i> (<i>Bucc.</i>), <i>Müller</i>	XI.	38	Kraussi, <i>Reeve</i>	VI.	21
<i>concentrica</i> , <i>Reeve</i>	XIX.	106	<i>lactea</i> , <i>Reeve</i>	XII.	41
<i>conifera</i> , <i>Férussac</i>	XVIII.	98	<i>Lamarckiana</i> , <i>Pfr.</i>	III.	12
<i>consimilis</i> , <i>Reeve</i>	XIX.	104	lamellata, <i>Potiez</i> and <i>Michaud</i> .	XVIII.	97
<i>corusca</i> , <i>Reeve</i>	XXII.	121	lamellosa, <i>Moricand</i>	XIX.	107
<i>costulata</i> , <i>Adams</i>	XX.	112	<i>Lattrei</i> , <i>Pfr.</i>	XIV.	53
<i>costulata</i> , <i>Pfr.</i>	VI.	20	leucozonias (<i>Voluta</i>), <i>Walch</i> .	XIV.	52
<i>Couroupa</i> , <i>Lesson</i>	II.	8	<i>lignaria</i> , <i>Reeve</i>	VIII.	27
<i>crassilabris</i> , <i>Benson</i>	XXI.	81	Lindoni, <i>Pfr.</i>	XXI.	88
<i>crassula</i> , <i>Benson</i>	XXII.	120	<i>lineata</i> , <i>Valenciennes</i>	X.	35
<i>crenata</i> , <i>Swainson</i>	X.	35	<i>magnifica</i> , <i>Pfr.</i>	IX.	33
<i>curvilabris</i> , <i>Pfr.</i>	XVIII.	94	<i>marginata</i> , <i>Swainson</i>	IV.	14
<i>cyanostoma</i> , <i>Rüppell</i>	XIII.	44	<i>marmorea</i> , <i>Reeve</i>	XXIII.	125

	Plate.	Species.		Plate.	Species.
Melampoides, <i>Lowe</i>	XXII.	122	reticulata, <i>Pfr.</i>	II.	9
monilifera (<i>Gland.</i>), <i>Pfr.</i>	XIV.	50	<i>Richii</i> , <i>Reeve</i>	X.	39
mucida (<i>Bulimus</i>), <i>Gould.</i>	XXIII.	126	rosea, <i>Férussac</i>	XIII.	46
Mülleri, <i>Férussac</i>	VIII.	25	<i>Sandwicensis</i> , <i>Pfr.</i>	XIX.	101
murrea, <i>Reeve</i>	VII.	22	Saulcydi, <i>De Joannis</i>	XXIII.	127
nigricans (<i>Gland.</i>), <i>Pfr.</i>	XIV.	54	semisculpta, <i>Pfr.</i>	XI.	37
Nilagarica, <i>Benson</i>	XXI.	87	semitarum (<i>Helix</i>), <i>Rang.</i>	XVI.	73
obeliscus, <i>Reeve</i>	XXIII.	129	sideratus, <i>Reeve</i>	XII.	38
obtusa (<i>Gland.</i>), <i>Pfr.</i>	XV.	62	<i>sinistrorsa</i> , <i>Pfr.</i>	V.	17
octona, <i>Gray</i>	XVII.	84	solidula, <i>Pfr.</i>	XVIII.	92
oleacea (<i>Helix</i>), <i>Férussac</i>	XIV.	51	Sowerbyana, <i>Pfr.</i>	VIII.	26
Oreas, <i>Benson</i>	XXI.	113	splendida, <i>Anton</i>	XIX.	100
ornata, <i>Pfr.</i>	VI.	20	striata (<i>Bucc.</i>), <i>Müller</i>	VI.	19
orophila, <i>Benson</i>	XIX.	105	striatella (<i>Helix</i>), <i>Rang.</i>	XVI.	74
orysacea, <i>D'Orbigny</i>	XVIII.	89	subulata, <i>Pfr.</i>	XVIII.	89
ovuliformis, <i>Lowe</i>	XXII.	119	sulcata, <i>Gray</i>	XVII.	86
<i>pallida</i> , <i>Swainson</i>	X.	35	suturalis, <i>Pfr.</i>	XX.	118
panthera, <i>Férussac</i>	III.	12	tenuispira, <i>Benson</i>	XVI.	76
papyracea, <i>Pfr.</i>	II.	6	tincta, <i>Reeve</i>	XI.	29
paxillus, <i>Reeve</i>	XVI.	77	Tortillana, <i>Pfr.</i>	XV.	66
<i>perdix</i> , <i>Lamarck</i>	I.	3	triticea, <i>Lowe</i>	XXII.	116
Perrotteti, <i>Pfr.</i>	XXI.	102	truncata (<i>Gland.</i>), <i>Say</i>	XIII.	47
Peruviana, <i>Lamarck</i>	XIV.	57	turris, <i>Pfr.</i>	XIII.	45
Pfeifferi, <i>Dunker</i>	I.	1	ustulata, <i>Lamarck</i>	XII.	40
Philippiana (<i>Gland.</i>), <i>Pfr.</i>	XIV.	49	Vanuxemensis, <i>Lea</i>	XIII.	48
Phillipsii, <i>Adams</i>	XV.	60	variegata, <i>Roissy</i>	I.	3
picta, <i>Reeve</i>	X.	34	venusta (<i>Gland.</i>), <i>Pfr.</i>	XV.	63
Poireti, <i>Rossmasler</i>	XIII.	43	<i>vexillum</i> , <i>Lamarck</i>	X.	35
Porto-Ricensis, <i>Pfr.</i>	XVIII.	93	virginea (<i>Bulla</i>), <i>Linn.</i>	X.	36
prunum, <i>Reeve</i>	IV.	13	vittata, <i>Swainson</i>	X.	36
purpurea (<i>Bulla</i>), <i>Chemn.</i>	IV.	15	vivipara, <i>Sowerby</i>	XVI.	70
Rangiana, <i>Pfr.</i>	XV.	65	voluta (<i>Bulla</i>), <i>Chemn.</i>	XIV.	55
Reeveana, <i>Pfr.</i>	IX.	29	zebra (<i>Bulla</i>), <i>Chemn.</i>	VII.	23

MONOGRAPH
OF THE GENUS
D O L I U M.

Ocean, in thy unfathomable depths
What beauties lie concealed from wondering eyes!
Pearls that adorn the neck of beauty; shells
On which the sea-born Venus finds a couch.—*Bryant.*

MONOGRAPH
OF THE
DOLPHIN
U. M.

Dolium Pl. I.



DOLIUM.

PLATE I.

Genus DOLIUM, Lamarck.

Testa tenuis, globoso-tumida, ventricosissima, transversim costata, nunquam longitudinaliter exsculpta, aperturâ amplâ, labro simplici, crenato, rarò fimbriato, labro columellari latè expanso. Operculum nullum.

Shell thin, globosely swollen, extremely ventricose, transversely ribbed, never longitudinally sculptured, aperture large, lip simple, crenated, rarely fimbriated, columellar lip broadly expanded. No operculum.

The *Dolia* or 'Tuns' are mainly distinguished from other genera of the great family of *Purpurifera* to which they belong, by their large globosely inflated growth, transverse ribs, and absence of any sort of longitudinal sculpture, presenting a singular contrast in this respect with their allies, the 'Harps,' in which ribs only occur in a longitudinal direction.

As may be gathered from the very light structure and ample volution of the shell, its animal inhabitant is distinguished for its large size and muscular strength, as well as by its voracity and comparative activity of habit. The head is furnished with a long retractile proboscis which the animal is capable of rapidly protruding or withdrawing, furnished at the extremity with a kind of rosette, as represented in the beautiful figure of *D. perdix* in the Voyage de l'Astrolabe by MM. Quoy and Gaimard. The disk or foot of *Dolium* is large and fleshy and, according to M. Deshayes, becomes inflated with water, when the animal desires to swim, imbibing the fluid through certain pores in the skin. The colours of the animal present a brilliant contrast with those depicted in the shell; the *D. perdix* is striped with light azure blue, the *D. pomum* is also light blue, and the *D. olearium* is of a rich coppery green.

The *Dolia* are partially distributed, although the *D. perdix* occurs equally on the shores of the Philippine Islands and in the West Indies. The *D. pomum* is found also both in the Philippine and Society Islands. This and the *D. ringens* from Peru are of more solid growth than the rest, and peculiar in having a hollow excavated in the columella, on which account they have been separated

from the genus by M. Valenciennes under the title of *Malea*. The *D. galea* of the Mediterranean is remarkable for its large size, but the *D. variegatum* has been recently collected at Torres Straits, North Australia, of even more gigantic proportions.

The shells of this genus, though not much esteemed by collectors, are by no means common; only fourteen species are known, and of these, but one new one has resulted from the researches of Mr. Cuming or Sir E. Belcher.

Species 1. (Mus. Cuming.)

DOLIUM GALEA. *Dol. testâ maximâ, ventricosissimâ, umbilicatâ, spirâ brevi, paululum subsidente, suturis profundè impressis, anfractibus septem, supernè tumidis, transversim costatis, costis convexis, confertis, superioribus lirâ sæpissimè interveniente, columellâ subcontortâ; albidâ aut pallidè fulvâ, apice nigricante, labro columellari albâ, labro intus fusco tincto.*

THE HELMET TUN. Shell very large, extremely ventricose, umbilicated, spire short, a little sunk in, sutures deeply impressed, whorls seven in number, swollen round the upper part, transversely ribbed, ribs convex, close-set, upper ones with most frequently an intervening ridge, columella somewhat twisted; whitish or pale fulvous colour, apex blackish, columellar lip white, lip stained within with brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 139.

Buccinum galea, Linnæus.

An eadem var.?

Dolium ampullaceum, Philippi.

Testa juvenis.

Dolium tenue, Menke.

Hab. Mediterranean.

The above recorded synonymes of this well-known species have arisen out of the circumstance of its having a more oblong form in an early stage of growth, and an occasional irregularity in the development of the ribs.

December, 1848.



2.

DOLIUM.

PLATE II.

Species 2. (Mus. Brit.)

DOLIUM MELANOSTOMA. *Dol. testá subgloboso-turbinatá, umbilicatá, ventricosissimá, spirá subprominulá, anfractibus septem, transversim costatis, costis subdepresso-convexis, interstitiis lirá parvâ subsidente undique impletis, columellâ latè expansâ, aperturâ amplâ, basi subprofundè emarginatâ; lutescente-albidâ, lævigatâ, nitente, columellâ intensè nigricante-brunneâ.*

THE BLACK-MOUTH TUN. Shell somewhat globosely turbinated, umbilicated, very ventricose, spire rather prominent, whorls seven in number, transversely ribbed, ribs somewhat depressly convex, interstices filled throughout with a small ridge, columella widely expanded, aperture large, rather deeply emarginated at the base; yellowish white, smooth, shining, columella deep blackish brown.

JAY, Cat. Mus. p. 124. pl. 8-9.

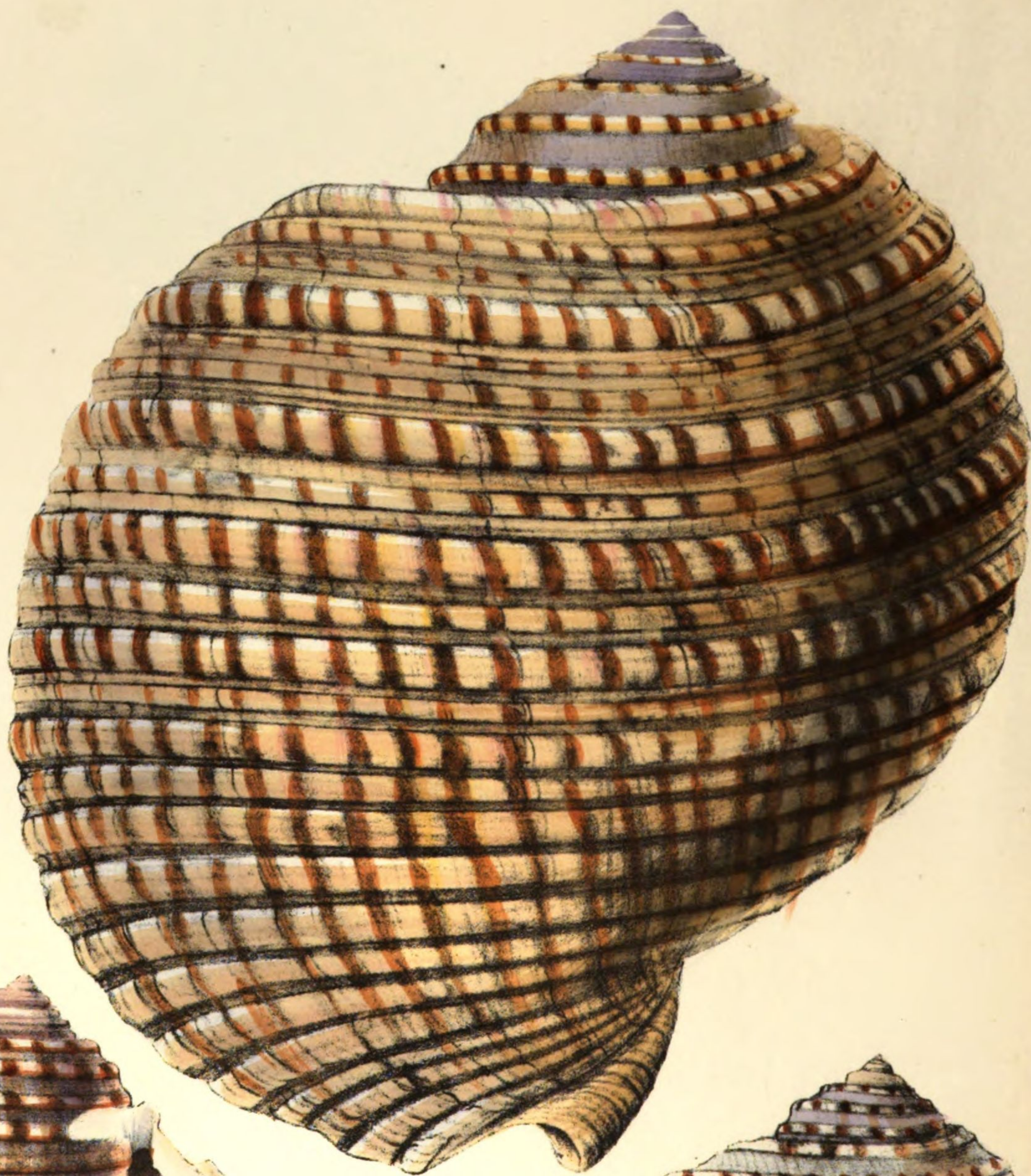
Hab. Friendly Islands; Jay.

The shell here represented, from the British Museum,

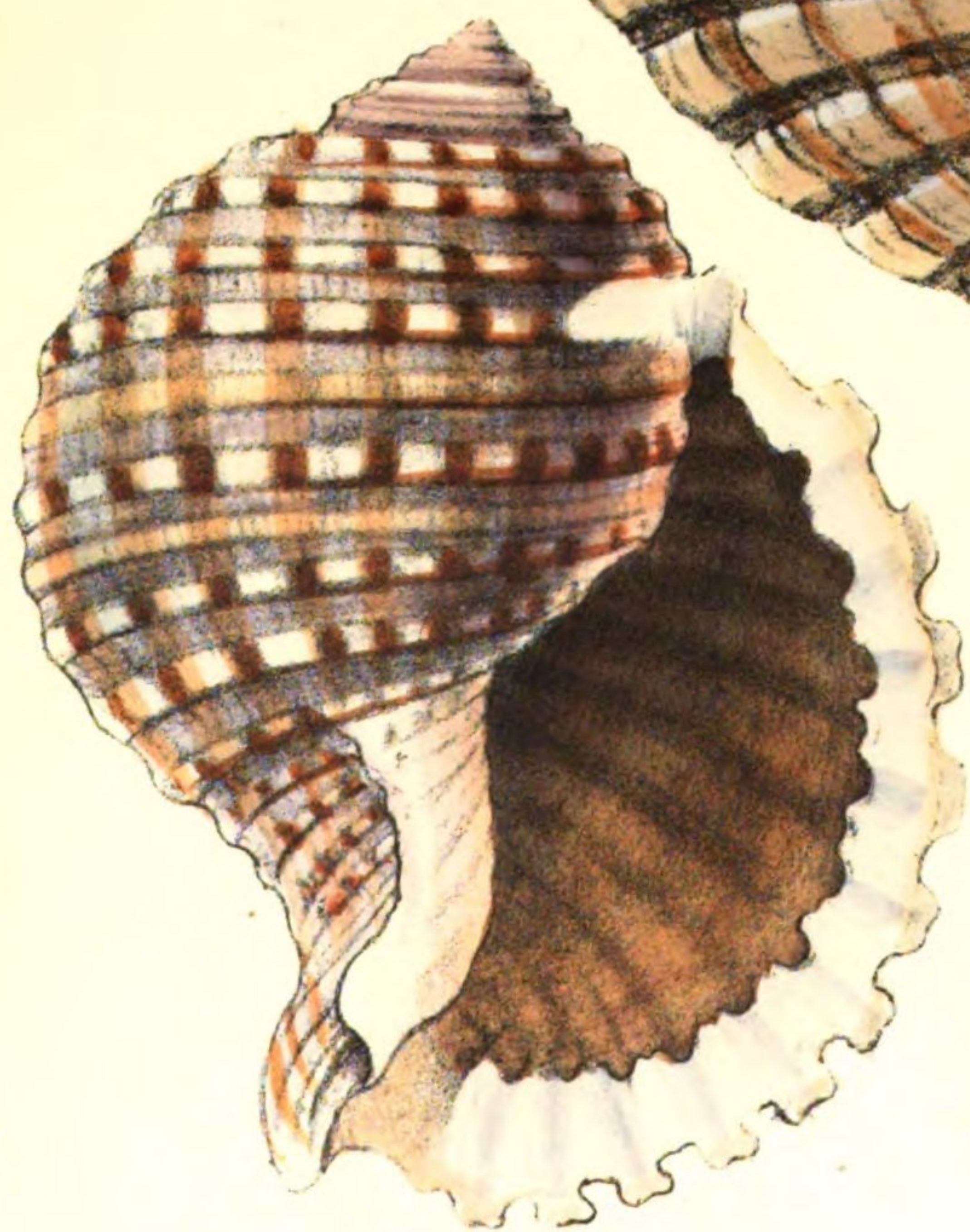
belonged to the late Earl of Tankerville, and is the individual specimen noted by Mr. Sowerby in his well-known Catalogue of that nobleman's collection, as *Dolium galea* var. *d.* I believe it to be distinct from that species, which is an inhabitant of the Mediterranean, and to be identical with a shell from the Friendly Islands in the collection of Dr. Jay of New York, described by that gentleman, under the name above recorded, in his published 'Catalogue' of 1839. "This splendid shell," says Dr. Jay, "was brought to Nantucket by a whaler from the Friendly Islands, where it was obtained by the natives in diving for shells."

The *D. melanostoma* is chiefly distinguished from the *D. galea* in having a more prominent spire and a regularly developed ridge throughout the interstices between the ribs, which have a lighter and more polished surface. The base of the shell beneath the umbilicus is characterized by its numerous concentric striae, whilst in the *D. galea* it is ridged in a longitudinal direction; and the rich dark colouring of the columellar lip appears also to be a character of the species.

December, 1848.



3 a



3 b



4

DOLIUM.

PLATE III.

Species 3. (Fig. *a* and *b*, Mus. Cuming.)

DOLIUM FIMBRIATUM. *Dol. testā globosā, ventricosissimā, vix umbilicatā, spiræ suturis impressis, anfractibus sex, conspicuè costatis, costis plus minusve numerosis, quarum præcipuis quatuordecim ad quindecim, columellā contortā, labro externo fimbriato et dentato; fulvescente-albā, costis rufescente-fusco maculatis, aperturæ fauce fuscā.*

THE FIMBRIATED TUN. Shell globose, very ventricose, scarcely umbilicated, sutures of the spire impressed, whorls six in number, conspicuously ribbed, ribs more or less numerous, the chief of which are about fourteen in number, columella twisted, outer lip fimbriated and toothed; fulvous white, ribs spotted with reddish-brown, interior of the aperture brown.

SOWERBY, Genera of Shells, f. 2.

Le Minjac, Adanson.

Dolium tessellatum (*pars*), Enc. Méth.

An eadem var.?

Dolium marginatum, Philippi.

Hab. Bay of Manila, Island of Luzon, Philippines; Cuming.

M. Deshayes notices as a character by which to distinguish this from the following species, that it has about fourteen ribs, whilst the *D. maculatum* has mostly nine. I find this observation may be mainly relied on, for when the ribs are really more numerous, as in the magnificent specimen represented at Fig. 3 *a*, there are still from fourteen to fifteen principal ribs, the rest being manifestly inferior both in colour and development. The species is further distinguished by the columella being abruptly

twisted and by the outer lip becoming strongly fimbriated on arriving at maturity.

M. Adanson named this shell after the Minjac or Muntjak, a spotted animal of the deer tribe, and M. Deshayes proposes to use this for the specific title. I do not, however, see how a common name of this kind can be adopted with propriety in the Latin.

Species 4. (Mus. Cuming.)

DOLIUM MACULATUM. *Dol. testā ovatā, ventricosissimā, vix umbilicatā, spirā suturis subimpressis, anfractibus sex, transversim costatis, costis ad novem, distantibus, lirā subobscurā interveniente, columellā subrectā, vix contortā, labro externo simplici; cærulescente-albā, costis rufescente-fusco maculatis, aperturæ fauce fuscā.*

THE SPOTTED TUN. Shell ovate, very ventricose, scarcely umbilicated, sutures of the spire somewhat impressed, whorls six in number, encircled by about nine distant ribs having a somewhat obscure ridge running between them, columella nearly straight, scarcely twisted, outer lip simple; bluish-white, ribs spotted with reddish-brown, interior of the aperture brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 140.

Buccinum dolium, Linnæus.

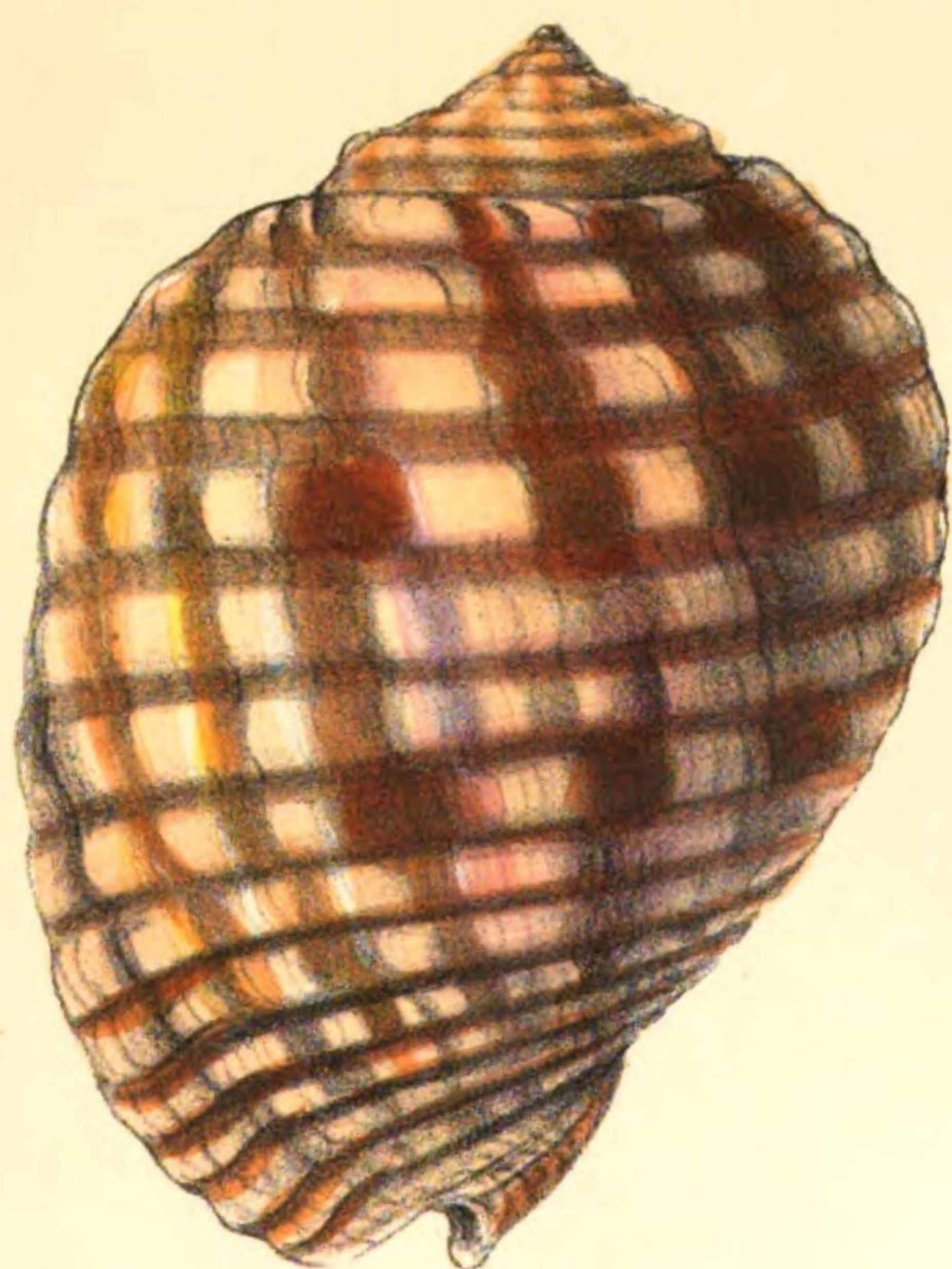
Dolium tessellatum (*pars*), Enc. Méth.

Hab. Eastern Seas.

This is a shell of lighter growth than the preceding species, the ribs are less numerous and consequently more distant from each other, the columella is straighter, and the lip simple.



5.



6 a.



6 b.

DOLIUM.

PLATE IV.

Species 5. (Mus. Cuming.)

DOLIUM RINGENS. *Dol. testā globosā, crassiusculā, spirā brevi, acutā, anfractibus septem, transversim costatis, costis ad sedecim, obscurè superficialiter bisectis, columellā medio peculiariter excavatā, callositate magnā costatā suprā et infra munitā, labro columellari latè expanso, aperturā contractā, labro externo latissimè plano-reflexo et fortiter dentato; fulvescente vel aurantio-albidā.*

THE GRINNING TUN. Shell globose, rather thick, spire short, sharp, whorls seven in number, transversely ribbed, ribs about sixteen in number, obscurely superficially bisected, columella distinguished by a peculiar excavation in the middle, having a large ribbed callosity above and below it, columellar lip widely expanded, aperture contracted, outer lip very broadly flatly reflected and strongly toothed; light fulvous or orange-white.

Cassis ringens, Swainson in Bligh Catalogue; Sowerby in Tankerville Catalogue, App. p. xxi.

Malea latilabris, Valenciennes.

Dolium latilabre, Kiener.

Hab. Payta, Peru; Cuming.

This remarkable species and the one which follows, possess an association of character intermediate between *Dolium* and *Cassis*, which gives them a strong claim to rank as a separate genus, as proposed by M. Valenciennes under the title of *Malea*. They are of more solid growth than any other species of *Dolium*, and are singularly characterized by an excavation of the columella, which has

some obtuse wrinkles or ribs above and below it. The outer lip is moreover distinguished by the mode in which it is flatly reflected and toothed.

Species 6. (Mus. Cuming.)

DOLIUM POMUM. *Dol. testā oblongo-ovatā, turgidā, solidā, subumbilicatā, spirā brevi, anfractibus sex, transversim costatis, costis ad duodecim, obtusis, medianis, vix elevatis, columellā rudè corrugato-costatā, callosā, non expansā, basin versus excavatā, aperturā subcontractā, labro plano-reflexo, intus dentato; fulvo-spadiceā, albi-maculatā, aperturæ fauce aurantiā.*

THE APPLE TUN. Shell oblong-ovate, swollen, solid, slightly umbilicated, spire short, whorls six in number, transversely ribbed, ribs about twelve in number, obtuse, the middle ones scarcely elevated, columella rudely ribbed in a wrinkled manner, callous, not expanded, excavated towards the base, aperture somewhat contracted, lip flatly reflected, toothed within; light fulvous bay, sprinkled with white spots, interior of the aperture orange.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 142.

Buccinum pomum, Linnæus.

Cassis labrosa, Martini.

Hab. Society and Philippine Islands; Cuming.

The excavation of the columella is much less defined than in the preceding species, and the columella also differs in not having an expanded laminar lip, its place being occupied by a callous deposit of white enamel.

December, 1848.

NOTES

Some of the most important results of the present investigation are the following:

- 1. The first result is the discovery of a new class of functions, which we call "quasi-periodic functions". These functions are characterized by the property that they are periodic with respect to a certain set of points, but not with respect to a single point.
- 2. The second result is the discovery of a new class of functions, which we call "quasi-continuous functions". These functions are characterized by the property that they are continuous with respect to a certain set of points, but not with respect to a single point.
- 3. The third result is the discovery of a new class of functions, which we call "quasi-differentiable functions". These functions are characterized by the property that they are differentiable with respect to a certain set of points, but not with respect to a single point.

The above results are of great importance for the theory of functions, and they have many applications in the theory of differential equations, in the theory of integral equations, and in the theory of probability.

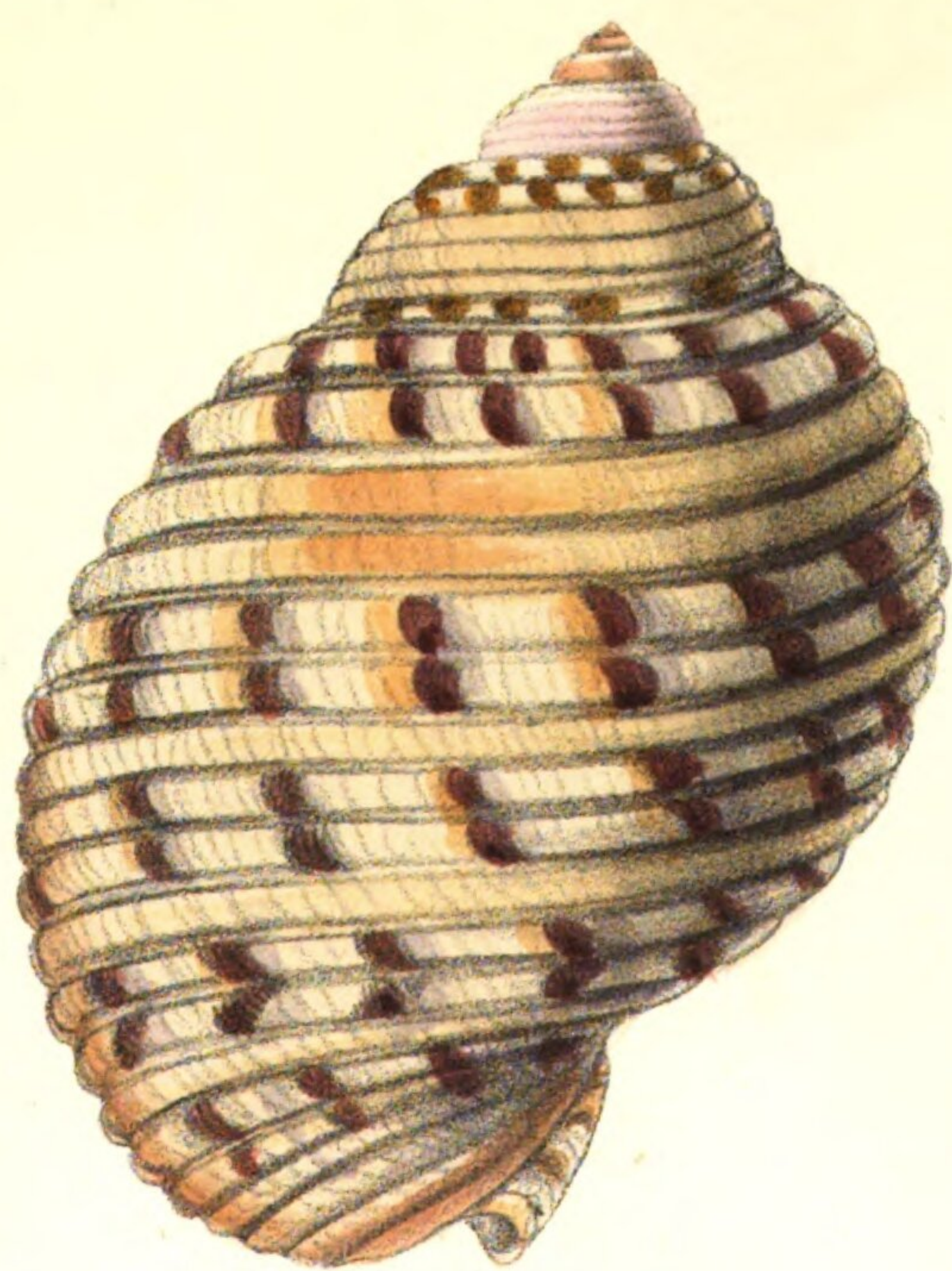
It is well known that the theory of functions is one of the most important branches of mathematics. In the present investigation, we have studied the properties of a certain class of functions, and we have discovered some new results. These results are of great importance for the theory of functions, and they have many applications in the theory of differential equations, in the theory of integral equations, and in the theory of probability.

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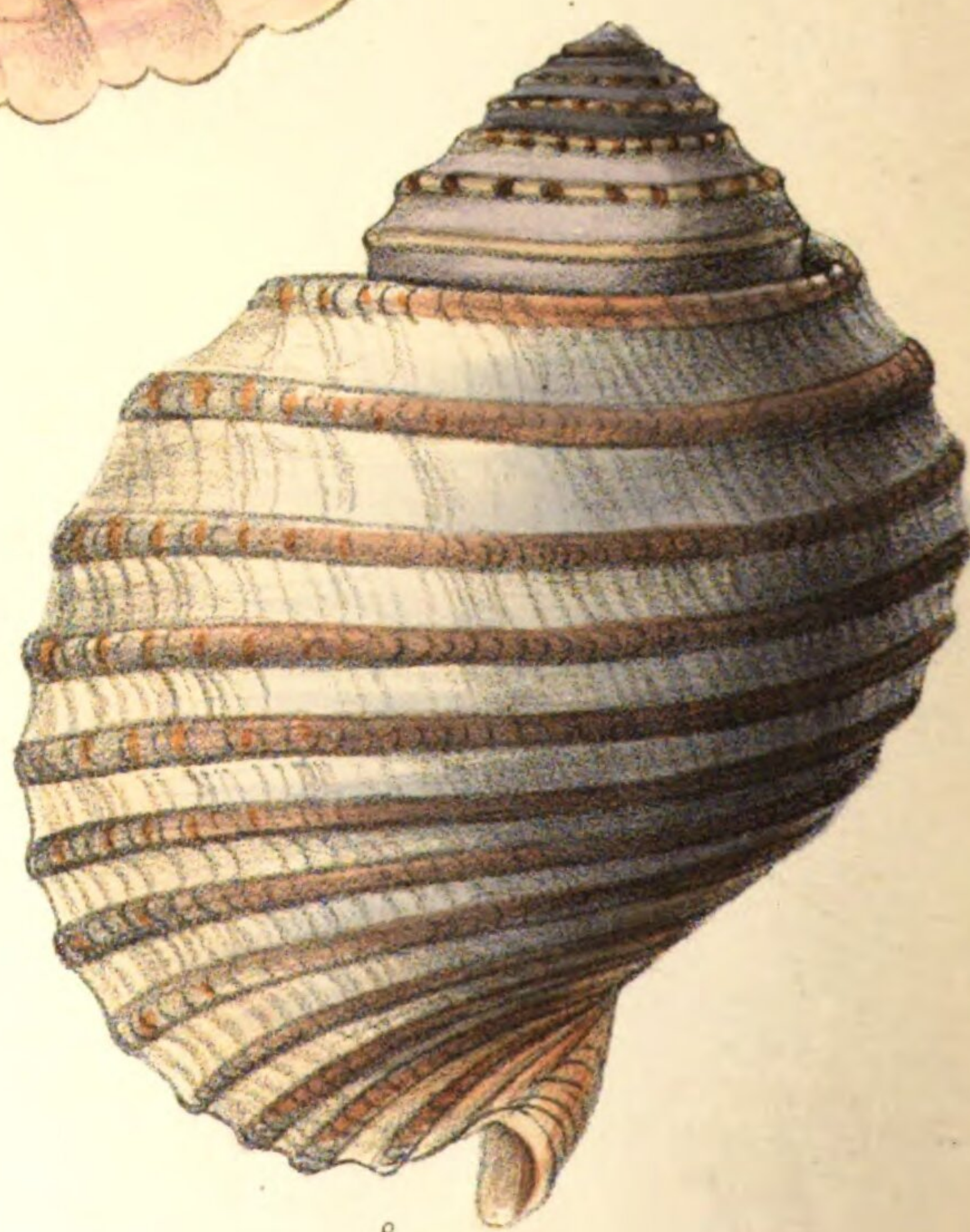
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7a.



7b.



8.

DOLIUM.

PLATE V.

Species 7. (Fig. a, Mus. Brit. Fig. b, Mus. Cuming.)

DOLIUM VARIEGATUM. *Dol. testá ovato-globosá, interdum maximá, umbilicatá, anfractibus septem, transversim costatis, costis sedecim ad septemdecim, subprominulis, interstitiis excavatis, superioribus lirá parvá interveniente; albidá, fulvo-rufescente tinctá, costis aliis rufo-fusco maculatis, aliis immaculatis, aperturæ fauce plus minus intensè aurantiá.*

THE VARIEGATED TUN. Shell ovately globose, sometimes very large, umbilicated, whorls seven in number, transversely ribbed, ribs from sixteen to seventeen in number, rather prominent, interstices hollowed, upper ones with a small intervening ridge; whitish, stained with fulvous red, some ribs spotted with reddish-brown, some unspotted, interior of the aperture more or less deeply stained with orange.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 143.
Dolium Kieneri, Philippi.

Hab. North Coast of New Holland; Jukes.

There is little doubt of this species being the true *D. variegatum* of Lamarck, who notifies the locality New Holland, from whence a magnificent series may be seen in the British Museum, including specimens even larger than any to be found of the *D. galea*. They were collected by Mr. Jukes during his recent expedition to that country, and are from Torres Straits.

The *D. Chinense*, which Dr. Philippi refers to Lamarck's *D. variegatum*, is no doubt the Chinese analogue of this species; its plan of growth and style of colouring are the

same, and it differs only in being more globose and of lighter structure; still it is not Lamarck's type, and when named by Chemnitz *Buccinum Australe seu Chinense*, he may have had specimens from both localities before him.

Species 8. (Mus. Cuming.)

DOLIUM COSTATUM. *Dol. testá ovato-oblongá, ventricosá, vix umbilicatá, anfractibus septem, supernè plano-depressis, subcanaliculatis, transversim costatis, costis tredecim ad quatuordecim, prominulis, distantibus, interstitiis latis, concavis, lævibus; aperturá oblongá, labro fimbriato et dentato; cæruleo-albicante, costis fulvo-fuscescentibus, apicem versus obscurè maculatis, apice nigricante.*

THE RIBBED TUN. Shell ovately oblong, ventricose, scarcely umbilicated, whorls seven in number, flatly depressed and slightly channelled round the upper part, transversely ribbed, ribs thirteen to fourteen in number, rather prominent, distant, interstices broad, concave, smooth; aperture oblong, lip fimbriated and toothed; bluish-white, ribs light fulvous brown, and obscurely spotted towards the apex, which is blackish.

DESHAYES, Anim. sans vert. vol. x. p. 144.

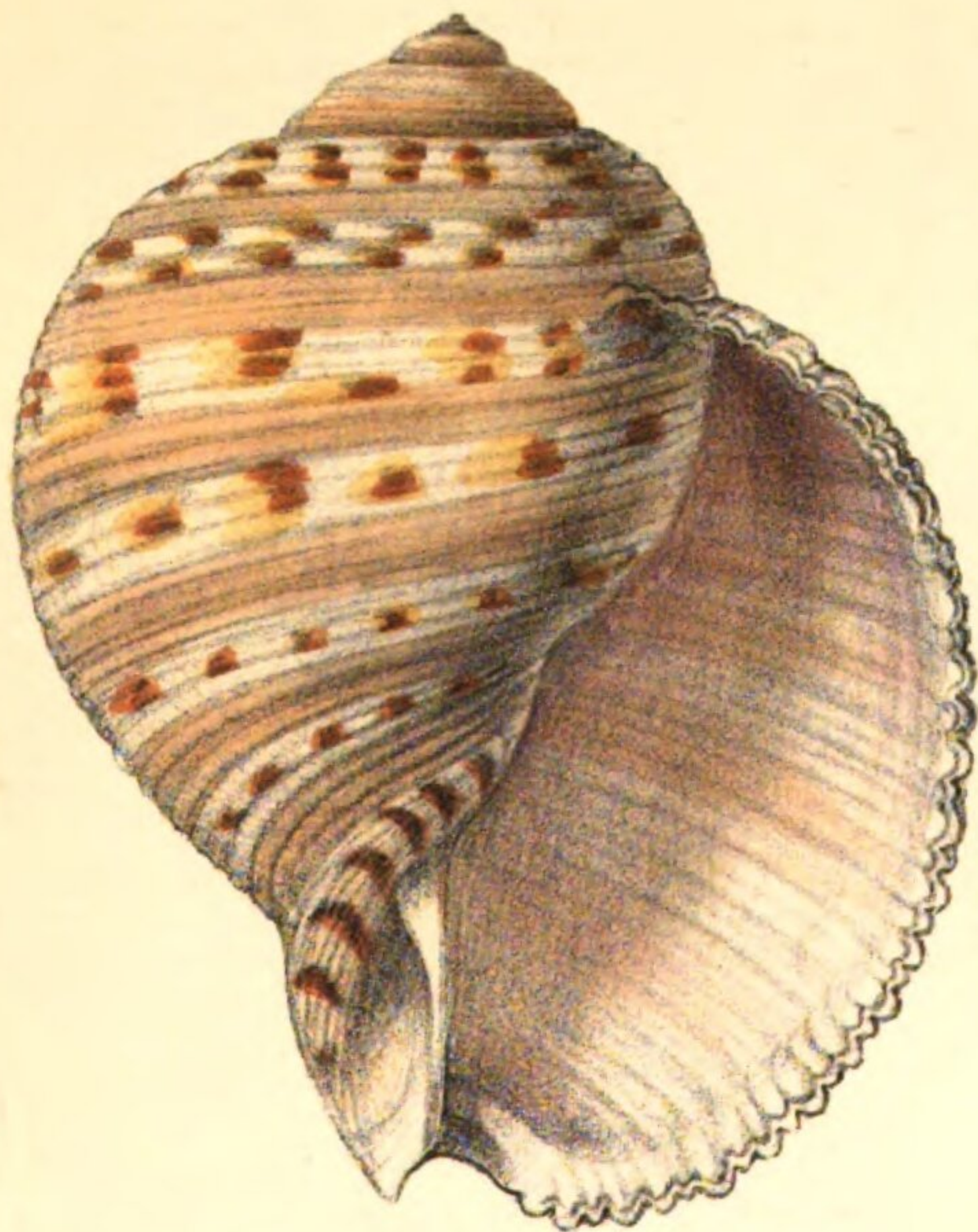
Dolium fasciatum, var., Kiener.

Hab. Philippine Islands; Cuming.

This bold species is amply distinguished from the *D. fasciatum*, by the prominent and remote development of the ribs, and absence of banded colouring.



9.



10. a.



10. b.

DOLIUM.

PLATE VI.

Species 9. (Mus. Brit.)

DOLIUM PERDIX. *Dol. testā ovato-oblongā, tenui, inflatā, basin versus obliquè effusā, umbilicatā, spirā subexsertā, anfractibus sex, transversim sulcatis et costatis, costis ad viginti, contiguis, plano-convexis, vix elevatis, columellā arcuatā, labro simplici; fulvo-brunneā aut rufescente-spadiceā, maculis lunatis albis plus minusve frequentibus, notatā, aperturæ fauce cærulescente-albā, aut brunnescente.*

THE PARTRIDGE TUN. Shell ovately oblong, thin, inflated, obliquely effused towards the base, umbilicated, spire somewhat exserted, whorls six in number, transversely grooved and ribbed, ribs about twenty in number, contiguous, flatly convex, scarcely raised, columella arched, lip simple; fulvous brown or light reddish bay, marked, more or less plentifully, with white lunate spots, interior of the aperture bluish-white or brownish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 144.

Buccinum perdix, Linnæus.

Eadem var. *Dolium plumatum*, Green.

Hab. Eastern, Western, and Pacific Oceans.

It is not often that in genera so limited in kind as the present, a species occurs with so wide a range of habitation as the *Dolium perdix*. Inhabiting both hemispheres, it differs in the ribs being more or less elevated, but in no feature, sufficiently, to allow of its being made the subject of another species, as introduced by Dr. Jacob Green in the Transactions of the Albany Institute.

The *D. perdix*, it may be observed, is modelled on a different type from the rest of the genus, the spire being more elevated and the aperture more obliquely effused.

Species 10. (Mus. Rolfe.)

DOLIUM CHINENSE. *Dol. testā ovato-globosā, tenuissimā, ventricosā, basi subtruncatā, vix umbilicatā, anfractibus sex, transversim multicostatis, costis tenuibus depressiusculis, lirā parvā interveniente, columellā contortā, labro simplici; albido fulvoque alternatim zonatā, zonis albidis rufo-fusco maculatis, aperturæ fauce pallidè aurantio tinctā.*

THE CHINA TUN. Shell ovately globose, very thin, ventricose, somewhat truncated at the base, scarcely umbilicated, whorls six in number, transversely many-ribbed, ribs rather depressed, with a small ridge running between them, columella twisted, lip simple; painted alternately with fulvous and white zones, white zones spotted with red-brown, interior of the aperture faintly tinged with orange.

DESHAYES, Anim. sans vert. vol. x. p. 146.

Buccinum Australe seu Chinense, Chemnitz.

Dolium variegatum, Philippi (not of Lamarck).

Hab. China Seas.

If Dr. Philippi had proclaimed the *D. Chinense* and *variegatum* to be one and the same species in different states, instead of assigning the shell under consideration to the Lamarckian species, and distinguishing that from Torres Straits by a new name, his opinion would have been less open to objection; for the characters of the New Holland specimens are so truly represented in this, under certain modifications, that they might almost be regarded as local varieties. They agree even in colour and pattern, and the only difference between them consists in the *D. Chinense* being of much smaller and lighter structure, of more contracted growth, and more numerous and finely ribbed.



11. a.



12. a.



12. b.



11. b.

DOLIUM.

PLATE VII.

Species 11. (Mus. Cuming.)

DOLIUM FASCIATUM. *Dol. testā ovato-ventricosā, vix umbilicatā, spirā canaliculatā, anfractibus sex ad septem, transversim costatis, costis sedecim ad septemdecim, plano-convexis, lævibus, interstitiā supremā latiusculā, columellā subcontortā, labro reflexo, fimbriato-dentato; albā, fasciis quatuor latiusculis aurantio-fuscis, pone labrum evanidis, cingulatā, apice cæruleo-nigricante.*

THE BANDED TUN. Shell ovately ventricose, scarcely umbilicated, channelled at the spire, whorls six to seven in number, transversely ribbed, ribs sixteen to seventeen, flatly convex, smooth, uppermost interstice rather wide, columella a little twisted, lip reflected, fimbriately toothed; white, encircled with four rather broad orange-brown bands, fading behind the lip, apex blue-black.

LAMARCK, Anim. sans vert. vol. x. p. 142.

Buccinum fasciatum, Bruguière.

Hab. Philippine Islands; Cuming.

The orange-brown bands which encircle this shell constitute a marked character of the species, whilst the manner in which they gradually fade away before reaching the lip, neatly illustrates a peculiarity which may be observed throughout the species, of a certain deficiency of pattern towards the completion of the shell. Before arriving at maturity, the animal appears to lose its powers of design in the display of ornamental colouring, and it not unfrequently happens, that after any sudden accident or concussion, sufficient to cause a sea-break, the shell is completed in a coarse rugged manner, with little indication of the design and variety of colouring which has characterized its previous growth.

It is hardly necessary to draw a comparison between this species and the *D. costatum*, confounded with it by M. Kiener, for the ribs in that species are very prominent,

and widely separated, whilst in the *D. fasciatum* they are very depressed and almost contiguous; the bands, moreover, wanting in *D. costatum*, are not to be lightly regarded.

Species 12. (Fig. a, Mus. Hanley; Fig. b, Mus. Cuming.)

DOLIUM ZONATUM. *Dol. testā globoso-ovatā, tenuiculā, vix umbilicatā, spiræ suturis canaliculatis, anfractibus sex, transversim costatis, costis depresso-convexis, quatuordecim ad sedecim, subdistantibus, lirā tenui, supernè duabus tribusve, interveniente; columellā tortuosā, labro simplici aut subtiliter crenulato; castaneo-rufescente, concolori, anfractuum parte supremā albidā, apice nigricante.*

THE ZONED TUN. Shell globosely ovate, rather thin, scarcely umbilicated, sutures of the spire channelled, whorls six in number, transversely ribbed, ribs depressly convex, fourteen to sixteen in number, rather distant, with a fine ridge, two or three towards the upper part, running between them; columella twisted, lip simple or finely crenulated; chesnut-red, of one uniform colour, uppermost portion of the whorls whitish, apex blackish.

GREEN, Transactions of the Albany Institute, vol. i. part 1. p. 131.

Dolium crenulatum, Philippi.

Hab. China.

This is the only species of the genus in which there is an isolated raised line between the interstices of the lower ribs of the shell; the *D. galea* has an elevated line between the upper ribs in an early stage of growth, but in this portion of the shell of *D. zonatum*, there are three. It is accurately described and figured by Dr. Jacob Green of the United States in the volume above referred to, and a magnificent specimen has been recently described and figured by Dr. Philippi in the third volume of his 'Abbildungen' as a new species with the name above recorded.



DOLIUM.

PLATE VIII.

Species 13. (Fig. 13. *b*, and 13. *c*, Mus. Cuming.)

DOLIUM CUMINGII. *Dol. testā globoso-ovatā, tenui, ventricosā, umbilicatā, anfractibus septem, transversim multicosatis, costis depresso-planis, confertis, interstitiis lineari-sulcatis, columellā subcontortā, labro simplici; fulvo-castaneā, maculis fuscis et albis fasciatim peculiariter nebulatā.*

CUMING'S TUN. Shell globosely ovate, thin, ventricose, umbilicated, whorls seven in number, transversely many-ribbed, ribs depressly flattened, close-set, interstices linearly grooved, columella slightly twisted, lip simple; fulvous chesnut, peculiarly clouded in a banded manner with brown and white spots.

HANLEY, MSS. Mus. Cuming.

Hab. Philippine Islands; Cuming.

This is unquestionably distinct both from the *D. olearium* and *Deshayesii*. Characterized in great measure by its globose form, it is also distinguished by its style of painting which is very peculiar, and, as in all the species of the genus, a constant and not unimportant feature.

Species 14. (Mus. Cuming.)

DOLIUM OLEARIUM. *Dol. testā ovatā, ventricosissimā, umbilicatā, spiræ suturis canaliculatis, anfractibus septem, transversim costatis, costis plano-depressis, latiusculis, confertis, interstitiis lineari-sulcatis, labro simplici; fulvo-castaneā, maculis conspicuis albis aspersā.*

THE OIL-JAR TUN. Shell ovate, extremely ventricose, umbilicated, sutures of the spire channelled, whorls seven in number, transversely ribbed, ribs flatly depressed, rather broad, close set, interstices linearly grooved, lip simple; fulvous chesnut, sprinkled with conspicuous white spots.

LAMARCK, Anim. sans vert. vol. x. p. 140.

Buccinum olearium, Bruguière.

Hab. Ceylon.

This is the *Buccinum olearium* of Bruguière, but not of Linnæus, which accounts for his remark in the Encyclopédie Méthodique: "J'ignore ce que Linné a entendu par les mots '*sulcis obtusis lineolā elevatā interstinctis*,' qu'il a

employé dans la différence spécifique de ce Buccin, puisque ses côtes, de même que ses sillons, n'offrent pas des lignes élevées." The shell upon which Linnæus founded his *Buccinum olearium*, preserved in the museum of the Linnæan Society of London, proves on examination to be nothing more than a very young specimen of the *D. galea*, in the early growth of which species there is always a fine elevated line in the interstices of the upper ribs.

From an observation of two young individuals of the Lamarckian *Dolium olearium* in the same collection, I am inclined to think Linnæus' *Bulla canaliculata*, which has never been identified, is this shell; there is, however, one point in which the description of that species in the 'Systema Naturæ' does not agree, namely, in respect of form, "*cylindrica*." For this reason the name *olearium*, with the above explanation, may be retained.

Species 15. (Fig. 13. *a*, Mus. Cuming.)

DOLIUM DESHAYESII. *Dol. testā subgloboso-oblongā, vix umbilicatā, spirā nunquam canaliculatā, anfractibus sex, spiraliter lineari-sulcatis, labro simplici; pallidè fulvescente-castaneā, maculis conspicuis albis, fusco-umbratis, plerumque binis, subdistantibus fasciatim pictā.*

DESHAYES' TUN. Shell somewhat globosely oblong, scarcely umbilicated, spire never channelled, whorls six in number, spirally linearly grooved, lip simple, pale fulvous chesnut, painted with bands of rather distant conspicuous white spots, shaded with brown, and ranging mostly in pairs.

Hab. Philippine Islands; Cuming.

A comparison of this shell with the Lamarckian *Dolium olearium* enables me to confirm the accuracy of M. Deshayes' observation (Anim. sans vert. nov. edit. vol. x. p. 140. note) to the effect, that the specimen figured for that species by Mr. Sowerby in his 'Genera of Shells,' and by myself, from the same engraving, in 'Conchologia Systematica,' is distinct from it. The sutures of the spire are not channelled, and there is a singular peculiarity in the style of colouring, being painted with white blotches, shaded with brown, ranging two and two in distant bands, or in bands longitudinally. The figure in 'The Genera' gives a characteristic view of the back of the species.

January, 1849.

DOLIUM.

	Plate.	Species.		Plate.	Species.
<i>ampullaceum</i> , Philippi	I.	1	<i>melanostoma</i> , Jay	II.	2
<i>Chinense</i> (<i>Bucc.</i>), Chemnitz ...	VI.	10	<i>Minjac</i> , Adanson	III.	3
<i>costatum</i> , <i>Deshayes</i>	V.	8	<i>olearium</i> (<i>Bucc.</i>), Bruguière ...	VIII.	14
<i>crenulatum</i> , Philippi	VII.	12	<i>perdix</i> (<i>Bucc.</i>), Linnæus	VI.	9
<i>Cumingii</i> , <i>Hanley</i>	VIII.	13	<i>plumatum</i> , Green	VI.	9
<i>Deshayesii</i> , <i>Reeve</i>	VIII.	15	<i>pomum</i> (<i>Buc.</i>), Linnæus	IV.	6
<i>fasciatum</i> (<i>Bucc.</i>), Bruguière ..	VII.	11	<i>ringens</i> (<i>Cassis</i>), Swainson	IV.	5
<i>fimbriatum</i> , <i>Sowerby</i>	III.	3	<i>tenue</i> , Menke	I.	1
<i>galea</i> (<i>Bucc.</i>), Linnæus	I.	1	<i>tessellatum</i> , Enc. Méth.	III.	3
<i>Kieneri</i> , Philippi	V.	7	<i>variegatum</i> , <i>Lamarck</i>	V.	7
<i>latilabre</i> , Kiener	IV.	5	<i>variegatum</i> , Philippi	VI.	10
<i>maculatum</i> , <i>Lamarck</i>	III.	4	<i>zonatum</i> , <i>Green</i>	VII.	12
<i>marginatum</i> , Philippi	III.	3			

MONOGRAPH
OF THE GENUS
CASSIS.

“Yet this obtains in all,
That all discern a beauty in His works,
And all can taste them. Minds have been formed
And tutor'd, with a relish more exact,
But none without some relish, none unmoved.”—*Cowper*.

MONOGRAPH

OF THE

C A S S I N

THE
LIBRARY
OF THE
CONGRESS



1. a.



1. b.



2.



3.



1. c.

CASSIS.

PLATE I.

Genus CASSIS, Lamarck.

Testa ovata vel trigono-ovata, ad basin canali recurvo ascendente terminata, spirā brevi, anfractibus interdum varicosis, anfractu ultimo valdè maximo, inflato; columellā sæpissimè plicato-rugatā vel granosā et plerumque latè expansā, aperturā elongatā plus minusve angustā, labro incrassato, dentato.

Shell ovate or triangularly ovate, terminating at the base with a recurved ascending canal, spire short, whorls sometimes varicose, last whorl very large, inflated; columella most frequently plicately wrinkled or grained, and generally widely expanded, aperture elongated, more or less narrow, lip thickened, toothed.

The *Cassides*, or Helmets, are a strong, muscular, but inactive group of mollusks, whose shell is mainly distinguished by its solid or inflated growth and short spire, and by an abruptly ascending recurved canal, through which the siphon conveying the water to the breathing organs passes, and is of more than ordinary dimensions. The head is stout and fleshy, prolonged into the tentacles after the manner of *Purpura* and *Buccinum*, the eyes being situated on the outer surface, near the base; M. Deshayes has, however, observed that in the *C. sulcosa* of the Mediterranean they are elevated on a short pedicle.

The calcifying functions of the *Cassides* are somewhat vigorously exercised, some of the shells being of large size and often of extremely solid growth; the mantle which lines the interior of the shell, extends in ample folds about the aperture, and is freely occupied in the secretion of that rich display of enamel which, through being deposited in layers of different tints, affords so beautiful a material for the engraving of Cameos. The *C. Madagascariensis*, on account of its finely expanded lip and purity of colour, is particularly adapted for this singular art of gem-engraving, practised by the ancients; and the well-known 'Bull's Mouth,' *C. rufa*, is also much used. The operculum of *Cassis* is very peculiar; it is of a horny composition, of an elongated crescent form, crenulated along the edge, and rayed with deep striæ.

We have no representative of this genus on our own coast, and only one species, *C. sulcosa*, ranges so far north as the Mediterranean. According to the observations of M. Deshayes, it lives upon the juices of different Bivalves, whose shells it penetrates with its proboscis, like the *Murices*.

The chief localities noticed in the following monograph are China, the Molucca and Philippine Islands, Algoa Bay and the islands of the Pacific, the West Indies, New Holland, and New Zealand. It should be observed, however, that the species are but sparingly distributed, and very few new ones have been collected during the last few years, amongst the vast numbers that have been discovered of other genera. The shells present a lively display of colours, and, from their singular plan of growth, constitute a very characteristic type in the great series of Gastropods.

Species 1. (Fig. a, b, c, Mus. Cuming.)

CASSIS TORQUATA. *Cass. testā ovatā, spirā subacuminatā, anfractibus evaricosis, convexis, lævibus, columellā basi uniplicatā, labro quinque- vel sex-spinoso; fulvescente-lacteā, anfractibus maculis quadratis intensè castaneis equidistantibus supernè et infernè uniseriatim pictis, labro castaneo maculato.*

THE ENCHAINED HELMET. Shell ovate, spire somewhat acuminate, whorls destitute of varices, convex, smooth, columella one-plaited at the base, lip five- or six-spinose; fulvous cream-colour, whorls painted round the upper and lower parts with a row of equidistant, square, dark chesnut spots, lip spotted with chesnut.

Variety β. (Fig. 1. c.)

Testa incrassata, anfractibus supernè nodoso-tuberculatis.

Shell thickened, with the whorls nodosely tubercled round the upper part.

Hab. New Holland.

This species, of which four excellent figures were published in 1773 by Martini (Conch. Cab. vol. ii. pl. 38. f. 383 to 386), has been confounded hitherto with that commonly known to collectors under its two-fold aspect of *C. vibex* and *erinaceus*. It is uniformly of smaller size and eminently distinguished by its style of painting, the pattern of which does not consist of longitudinal flames or dot-lines, but of two conspicuous chains of square chesnut spots, one encircling the whorls immediately beneath the sutures, the other at the base; the large intermediate surface being clear and unspotted, beyond three faint indications of bands.

Species 2. (Mus. Brit.)

CASSIS CORNUTA. *Cass. testā maximā, ovatā, ventricosā, spirā depressā, apice acutā; anfractibus univaricosis, supernè angulatis, fortiter tuberculatis, tuberculis erecto-conicis, infra cingulis duobus callosis obsoletè tuberculatis, tuberculis ætate crescentibus, cingulorum interstitiis scrobiculis parvis, hexagonis, nunc regularibus, nunc irregularibus, creberrimè reticulatis; columellā concavo-depressā, labroque externo rudè et fortiter rugatis, labris plus minusve plano-expansis et supernè junctis; lacteā, ferrugineo-rufescente hic illic pallidè tinctā, varicibus cingulisque fusco grandimaculatis, columellā et aperturā fulvo-citrinis, rugis albicantibus, scrobiculis sub encaustum peculiariter opaco-albis.*

THE HORNED HELMET. Shell very large, ovate, ventricose, spire depressed, sharp at the apex; whorls one-varicose, angulated round the upper part, strongly tubercled, tubercles erectly conical, two callous obsoletely tubercled belts beneath, the tubercles increasing with age, interstices between the belts closely reticulated with small hexagonal pits, sometimes regular, sometimes irregular; columella concavely depressed, and, with the outer lip, rudely and strongly wrinkled, lips more or less flatly expanded, joined at the upper part: cream-coloured, palely tinged here and there with rusty red, varices and belts stained with large brown blotches, columella and aperture fulvous citron, wrinkles whitish, pits beneath the enamel peculiarly opake-white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 20.

Buccinum cornutum, Linnæus.

Cassidea cornuta, Bruguière.

Eadem, *Cassis labiata*, Chemnitz.

Hab. Moluccas, West Indies, Pacific Islands.

This fine species, the largest of the genus, grows to an immense size, yet examples are not unfrequently met with, of comparatively small dimensions, bearing all the characters of the adult shell, except in having little indication of tubercles on the two central callous belts. The interstices between these, and other parts of the surface, are distinguished in all stages of growth by a beautiful honey-combed structure, consisting of a number of hexa-

gonal cells, which in that part of the body-whorl overlaid by the columellar lip, become filled up with opake-white matter. The tubercles along the upper angle of the whorls are always very prominent, and sometimes rather compressed.

The *C. cornuta* assumes two very distinct varieties of form: one extremely broad and ventricose at the base of the spire, attaining rather the larger size; the other of a more oblong form, in which the lip is more widely expanded into a flattened plane. It is the latter variety of which Chemnitz has given two admirable figures in the Conchylien Cabinet, vol. *ix*. pl. 184 and 185, under the name *Cassis labiata*.

Species 3. (Mus. Cuming.)

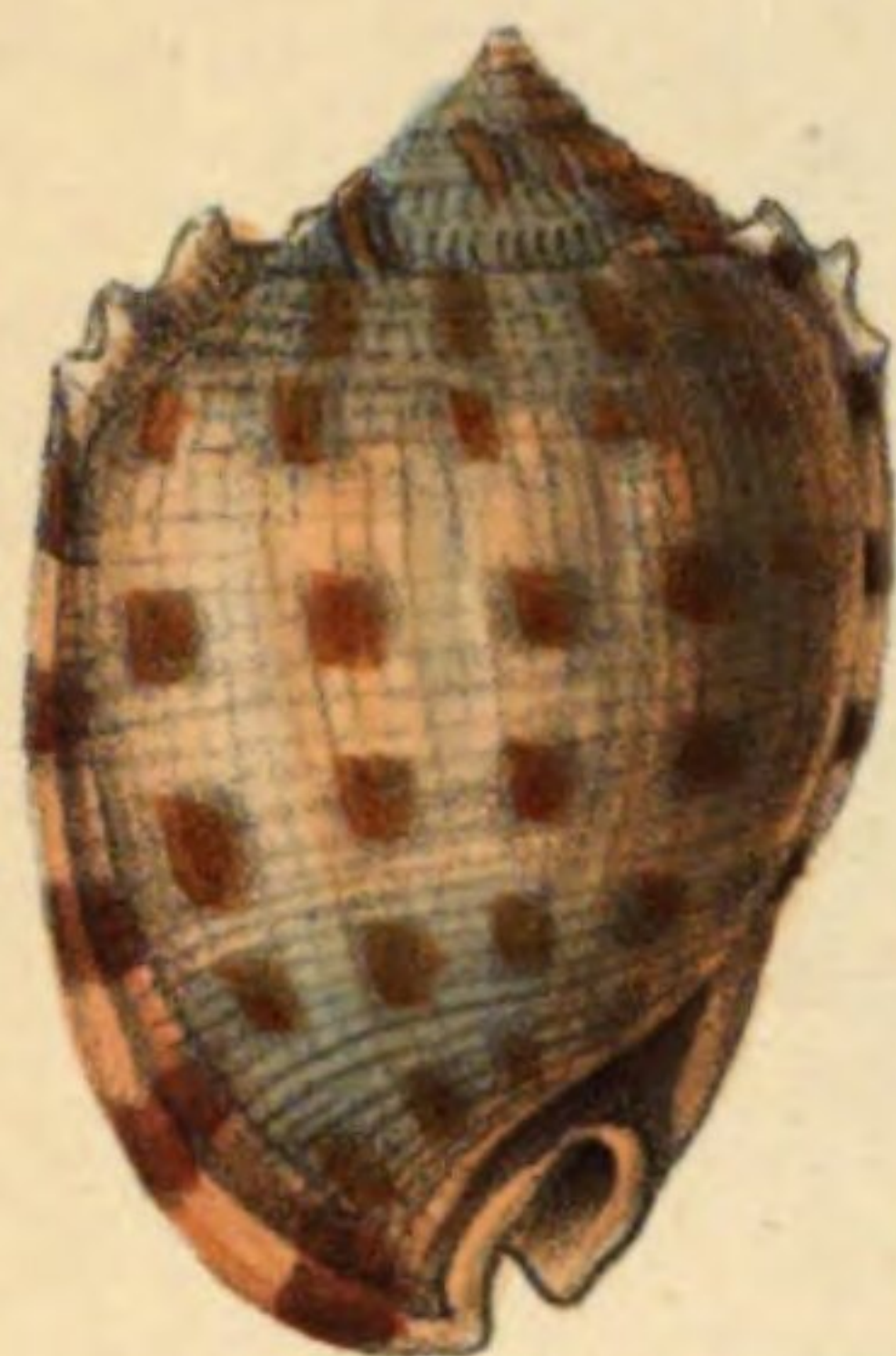
CASSIS SEMIGRANOSA. *Cass. testā ovatā, basi contractā, spirā acuminatā, apice subpapillari, anfractibus evaricosis, rotundatis, lævibus, basi striatis, supernè granorum seriebus quinque vel sex conspicuè cingulatis, granis sub plicas descendentes; columellā tenuiplicatā, basi truncatā, labro reflexo, lævigato; albidā, fulvo-ferrugineo plus minusve tinctā.*

THE HALF-GRAINED CASSIS. Shell ovate, contracted at the base, spire acuminate, somewhat papillary at the apex; whorls destitute of varices, rounded, smooth, striated at the base, encircled round the upper part with five or six conspicuous rows of grains, which are upon descending folds; columella finely plicated, truncated at the base, lip reflected, smooth; whitish, more or less stained with fulvous rust colour.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 37.

Hab. Van Dieman's Land.

The rows of grains which are ranged along the summit of the descending folds round the upper portion of the whorls are extremely characteristic, the columella is peculiarly short and truncated, and the smoothness of the outer lip is an unusual feature. The shell is usually stained with a kind of fulvous rust colour, whilst the apex is of ivory whiteness with a somewhat papillary aspect.



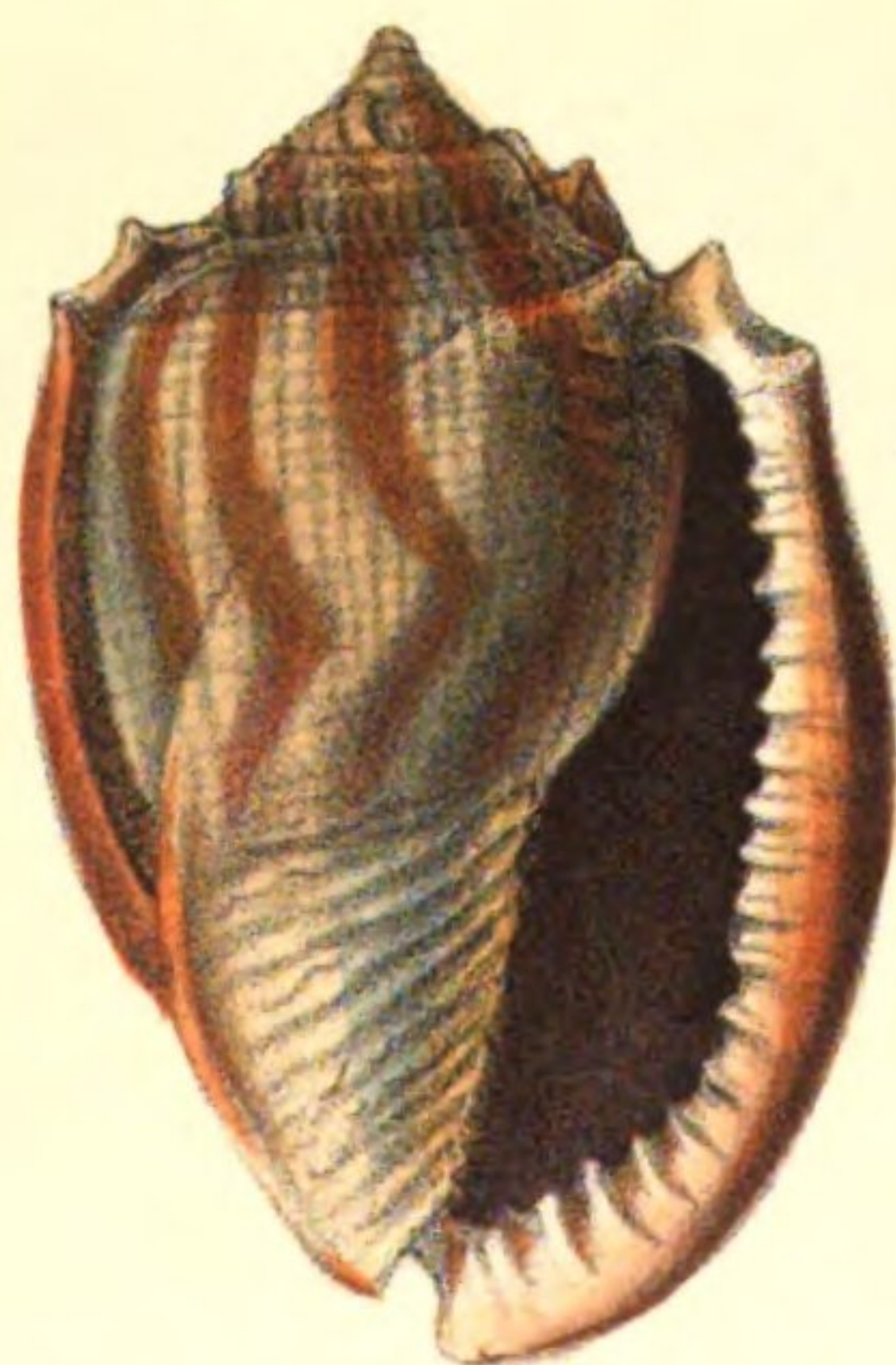
4. a.



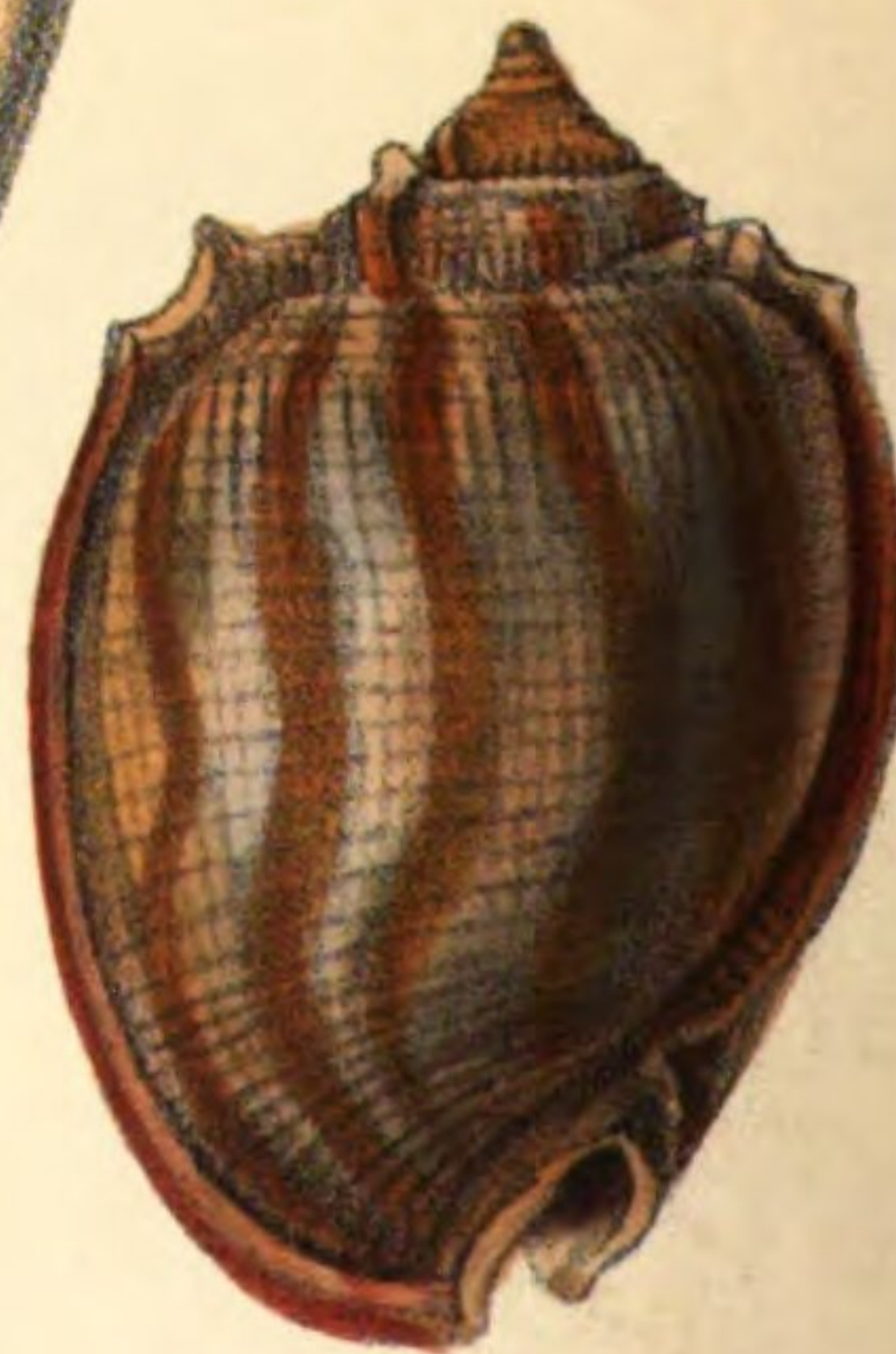
4. b.



5.



4. c.



4. d.

CASSIS.

PLATE II.

Species 4. (Fig. *a, b, c, d*, Mus. Cuming.)

CASSIS DECUSSATA. *Cass. testā ovatā, compressiusculā, spirā subacuminatā, apice acutā; anfractibus univari-
cosis, striis elevatiusculis longitudinalibus, incisisque
transversis undique decussatis, præcipuè ad spiram;
varicibus supernè peculiariter bi-tri-dentato-spinosis,
columellā fortiter plicato-rugatā; livido-cærulescente,
maculis quadratis vel strigis fulvis longitudinaliter
undatā, maculis strigisve super varices et aperturæ
fauce intensè castaneo-rufis.*

THE DECUSSATED HELMET. Shell ovate, rather com-
pressed, spire somewhat acuminate, sharp at the
apex; whorls one-varicose, decussated throughout
with rather elevated longitudinal and engraved trans-
verse striæ, especially on the spire; varices peculiarly
two-three-dentately spinous at the upper part; colu-
mella strongly plicately wrinkled; livid blue, longitu-
dinally waved with fulvous streaks or square spots,
interior of the aperture and spots or streaks upon the
varices deep chesnut-red.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 29.
Buccinum decussatum, Linnæus.

Cassidea decussata, Bruguière,

Hab. — ?

In this species the striped and tessellated designs of
painting which characterize the *C. areola* and *undata* are
united, the varieties being unaccompanied by any dif-
ference of form or sculpture. The chief peculiarity in the
sculpture of *C. decussata*, the same in both varieties, con-
sists in the longitudinal striæ being raised, whilst the trans-
verse striæ are engraved; in other words, the former are
ridges, the latter grooves. Another feature to be remarked
is that the varices, including that which forms the reflected
margin of the aperture, are armed at the summit, next
the spire, with two or three dentate spines which in all
other species, where they occur, are at the base.

M. Deshayes remarks in a note on *C. decussata* (Anim.
sans vert. vol. x. p. 9.) that Lamarck in referring to

Martini's figures (Conch. Cab. vol. 2. f. 360-1, and 367-
8.) has confounded a young specimen of his *C. zebra* (*C.
undata*) with it. This is a mistake: Lamarck was perfectly
correct, and so was Martini, who, although he describes
each of these shells separately, refers them both to the *Buc-
cinum decussatum* of Linnæus. They represent truly the
species in different states, and perhaps the most extreme.

Species 5. (Mus. Brit.)

CASSIS MADAGASCARIENSIS. *Cass. testā sub-trigono-
ovatā, ventricosā, elevato-rotundatā, anfractibus longi-
tudinaliter subirregulariter striatis, transversim super-
ficialiter sulcatis, triseriatim tuberculatis, tuberculis
supremis grandibus, prominentibus; columellā profusè
plicato-rugatis, rugis hic illic bifurcatis, labro latissimè
expanso, marginibus conjunctis, labro externo intus con-
spicuè dentato; cæruleo-albicante, facie encausticā ru-
fescence-incarnatā, dentibus rugisque albis, interstitiis
intensè purpureo-castaneis.*

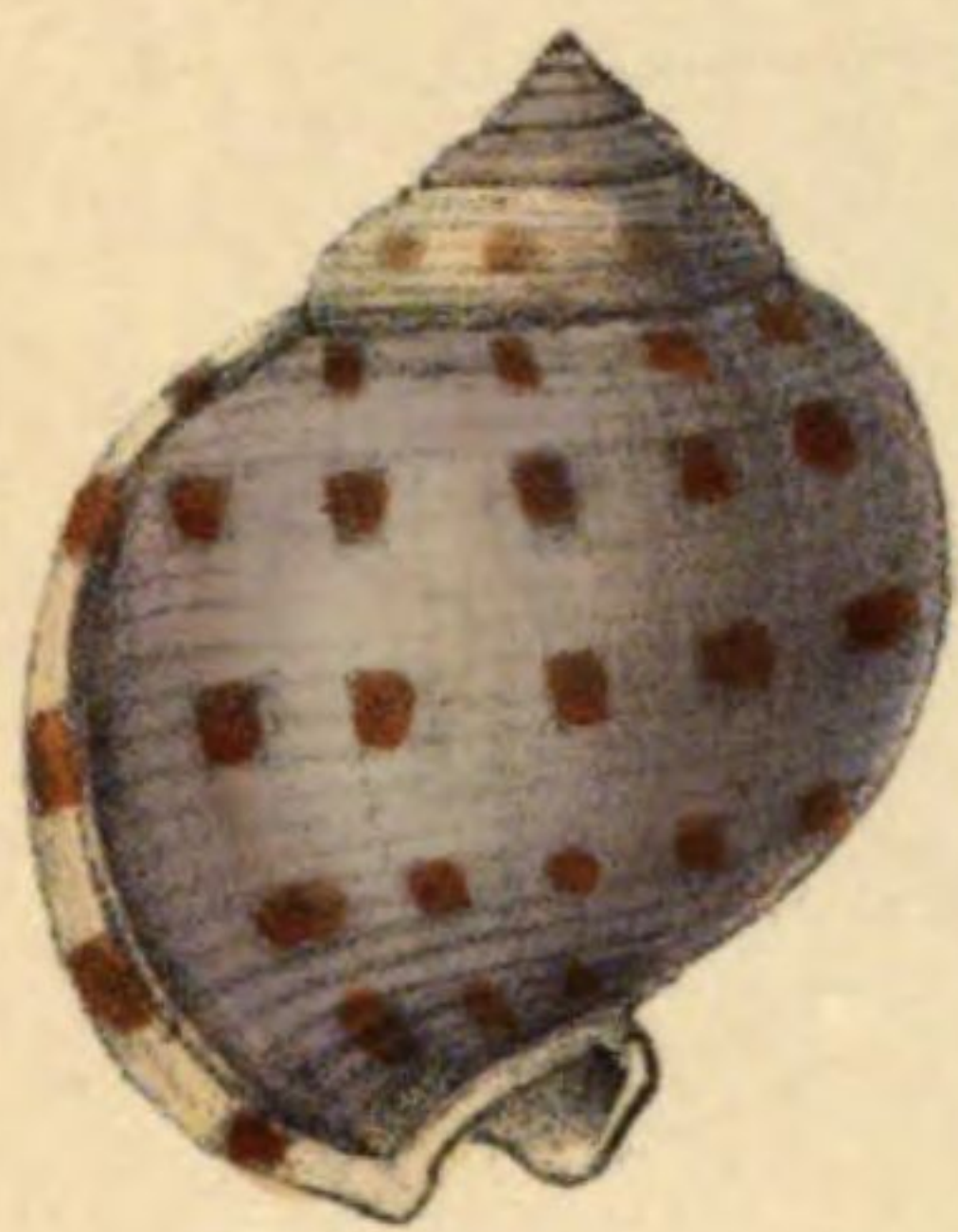
THE MADAGASCAR HELMET. Shell somewhat triangu-
larly ovate, ventricose, elevately rotundate, whorls
longitudinally somewhat irregularly striated, trans-
versely superficially grooved, encircled with three
rows of tubercles, of which the uppermost are large
and prominent; columella profusely plicately wrinkled,
wrinkles here and there bifurcated, lip very widely
expanded, margins joined, outer lip conspicuously
toothed within; bluish white, enamelled face reddish
flesh-coloured, teeth and wrinkles white, interstices
intense purple-chesnut.

LAMARCK, Anim. sans vert. vol. x. p. 20.

Hab. Madagascar.

This fine species may be recognised by the delicate flesh
tint of its enamelled face and deep purple-chesnut colouring
of the lip and columella; it attains almost as large a size
as the *C. cornutus*. In sculpture it differs from that species
in having the surface transversely rather superficially
grooved, not cancellated.

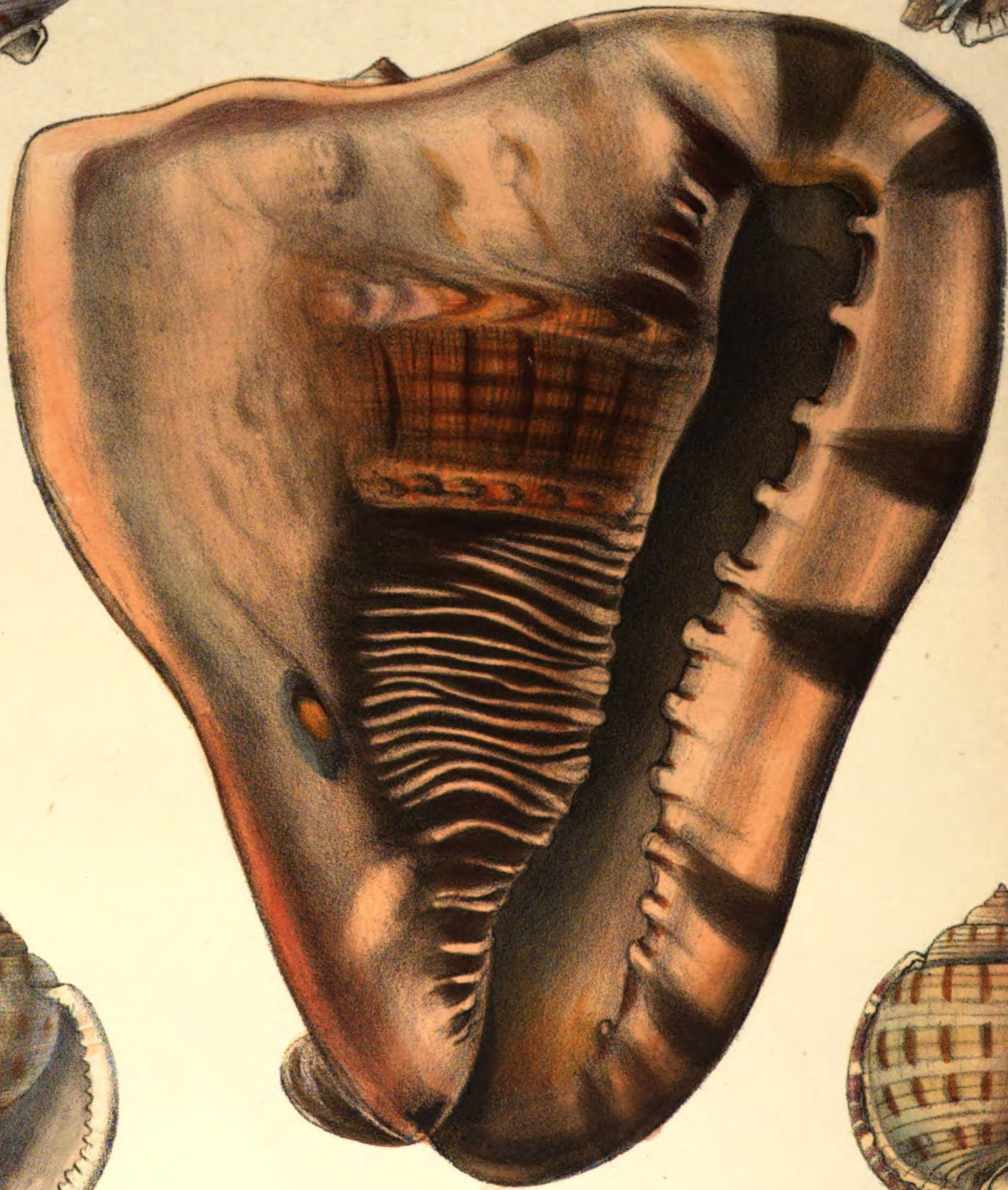
August, 1848.



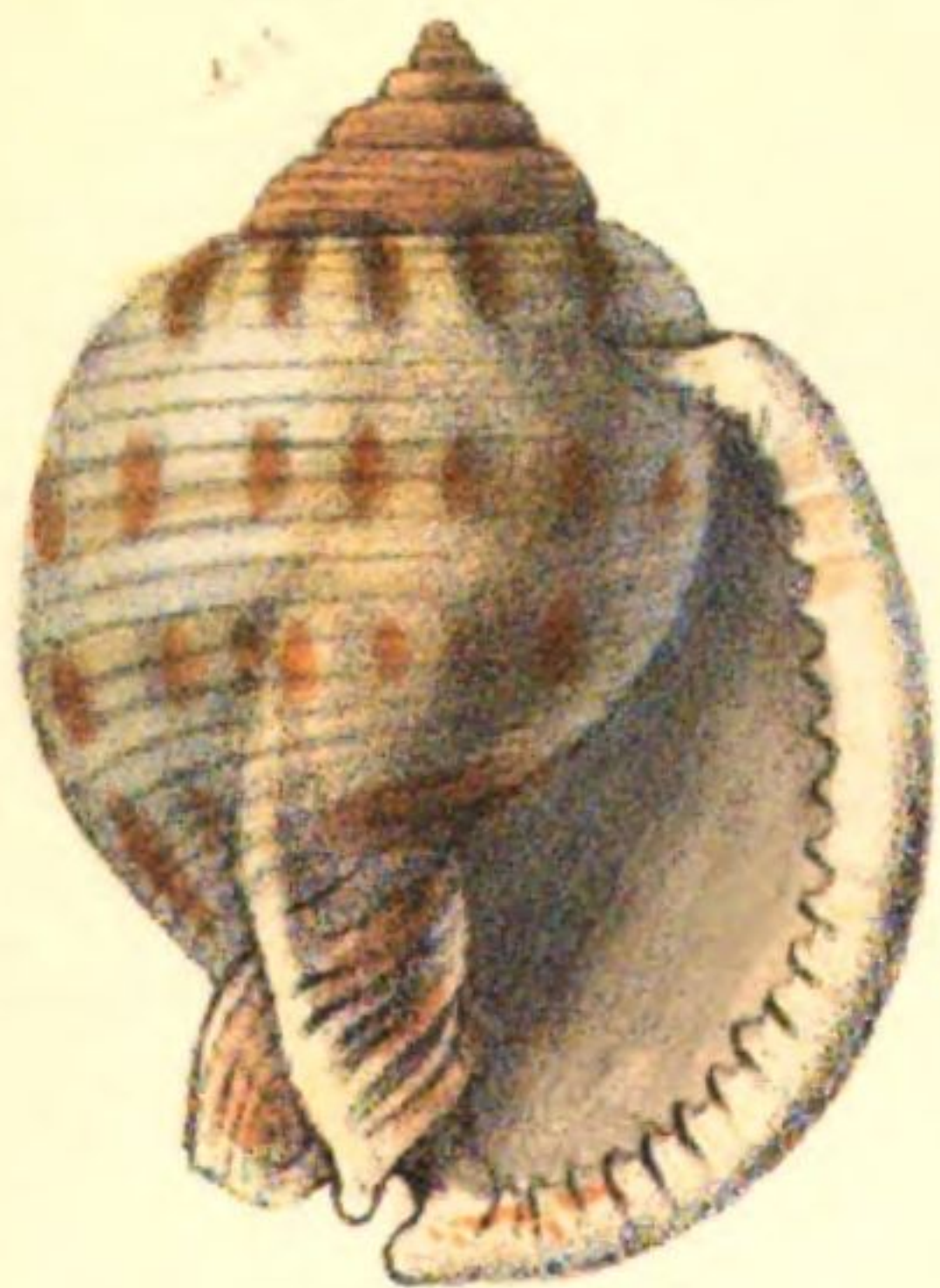
6a. ? pila ?



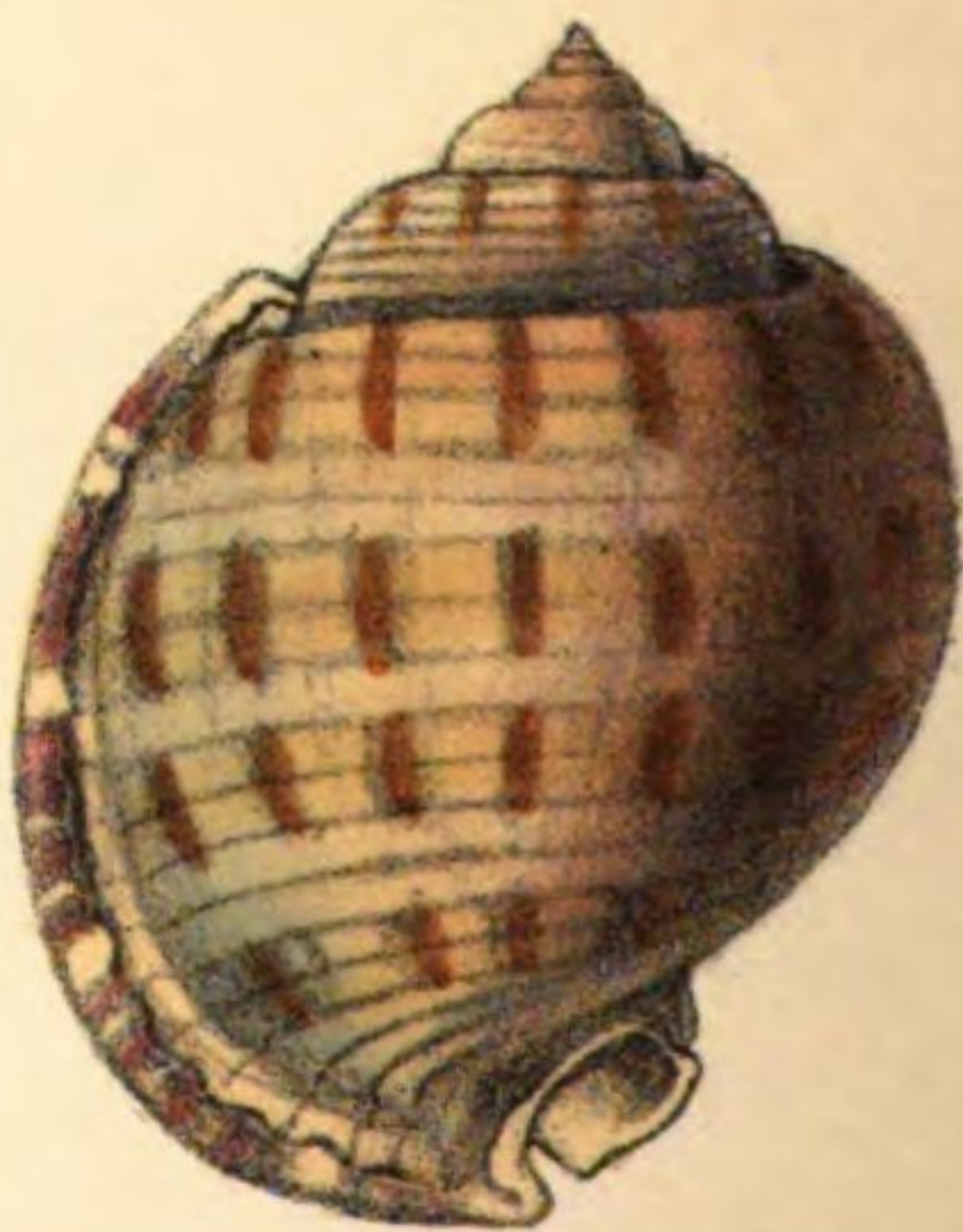
? 6. b.
pila ?



7.



8. a.



8. b.

CASSIS.

PLATE III.

Species 6. (Mus. Cuming.)

CASSIS BISULCATA. *Cass. testā globosā, tenuiculā, spirā brevi, anfractibus evaricosis, rotundatis, transversim impresso-striatis, sulcis duobus subobscuris infra suturas; columellā fortissimè rude rugoso-plicatā, labro dentato-lirato; cæruleo-albicante, maculis fulvo-rufescentibus parvis quadratis distantibus ornatā, apice livido-nigricante.*

THE DOUBLE-GROOVED HELMET. Shell globose, rather thin, spire short, whorls destitute of varices, rounded, transversely impressly striated, with two somewhat obscure grooves beneath the sutures; columella very strongly roughly plaited, lip dentately ridged; bluish white, ornamented with small fulvous red distant square spots, apex pale livid black.

SCHUBERT and WAGNER, *Conch. Cab. Supp.* p. 68. pl. 223. f. 3081, 3082.

Hab. Manila, Island of Luzon (on the reefs); Cuming.

The general aspect and sculpture of this shell approaches nearest to that of *C. canaliculata*, from which it differs in not having the deep broad channelled groove around the sutures, whilst the coloured squares are more distant, darker, and more defined.

Species 7. (Mus. Brit.)

CASSIS TUBEROSA. *Cass. testā magnā, trigono-ovatā; gibbosissimā, spirā plano-convexā, apice acutā; anfractibus univaricosis, supernè angulatis, tuberculatis, tuberculo centrali dorsali prominentiore, infra cingulos tribus callosis, obsoletè tuberculatis, interstitiis transversim sulcatis, longitudinaliter creberrimè corrugato-lineatis; columellā planiusculā, leviter concavā, rudè rugatā, rugis nonnullis sulco divisis, labro externo fortiter dentato; aquilo-albā, dorso rufo-fuscā cæruleoque nebulatā, castaneo conspicuè longitudinaliter flammātā, varicibus maculis perpaucis nigricantibus notatis, columellā vividè castaneā, rugis albidis.*

THE TUBEROUS HELMET. Shell large, triangularly ovate, very hump-backed, spire flatly convex, sharp at the apex; whorls one-varicose, angulated round the

upper part, tubercled, central dorsal tubercle more prominent than the rest, with three obsoletely tubercled callous belts, interstices transversely grooved and longitudinally very closely lineated in a somewhat wrinkled manner; columella rather flattened, slightly concave, rudely wrinkled, some of the wrinkles divided by a groove, outer lip strongly dentated; swarthy-white, clouded on the back with reddish brown or blue, varices marked with a very few blackish blotches, columella bright chesnut, wrinkles whitish.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 21.

Cassidea tuberosa, Bruguière.

Testa junior. *Buccinum striatum*, Gronovius.

Hab. Philippine Islands; Cuming.

This species is mainly distinguished by its swarthy hue and solid triangular growth, the back of the shell being peculiarly gibbous and strongly tubercled.

Species 8. (Mus. Metcalfe.)

CASSIS CANALICULATA. *Cass. testā globoso-ovatā, tenuiculā, subinflatā, spirā breviusculā, suturis peculiariter latè et profundè canaliculatis; anfractibus evaricosis, transversim inciso-striatis; columellā rudè plicato-liratā, labro dentato; livido-albicante, maculis oblongo-quadratis inæqualibus rufescente-fuscis subindistinctè quadrifasciatis.*

THE CHANNELLED HELMET. Shell globosely ovate, rather thin, somewhat inflated, spire rather short, sutures peculiarly broadly and deeply channelled; whorls destitute of varices, encircled with engraved striæ; columella rudely plicately ridged, lip dentated; livid white, somewhat indistinctly four-banded with unequal oblong-square reddish brown spots.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. p. 37.

Cassidea canaliculata, Bruguière.

Hab. Philippine Islands; Cuming.

Distinguished from all other species by the curious deep broad channel around the sutures.



10 a.



9. b.



10. b.



9 a.

CASSIS.

PLATE IV.

Species 9. (Mus. Cuming.)

CASSIS SPINOSA. *Cass. testā oblongo-ovatā, tenuiculā, ventricosā, basi attenuatā, spirā depresso-convexā, apice acutā, anfractibus univaricosis, transversim obsolete sulcatis, spirā basique longitudinaliter tenuiplicatis, supernè nodulorum seriebus tribus, quarum superiore minutā moniliformi, cingulatis; columellā concavā, plicato-rugatā, rugis brevibus irregularibus, labro externo rudè dentato, serie nodulorum; lacteā, fulco-spadiceo pallidè tinctā, fasciis quinque aut pluribus, maculis semilunaribus saturatioribus albo articulatis, cingulatā.*

THE SPINOUS CASSIS. Shell oblong-ovate, rather thin, ventricose, attenuated at the base, spire depressly convex, sharp at the apex, whorls one-varicose, transversely obsolete grooved, longitudinally finely plicated on the spire and at the base, encircled with three rows of nodules round the upper part of which the uppermost row is minute and necklace-like; columella concave, plicately wrinkled, wrinkles short and irregular, outer lip rudely dentated, with the addition of a row of nodules; cream-coloured, palely stained with fulvous bay, and encircled by four or more bands of semilunar darker bay spots articulated with white.

DESHAYES, Anim. sans vert. vol. x. p. 23, note.

Buccinum spinosum, Gronovius, Zooph. p. 302. pl. 19. f. 9.

Buccinum Rumphii, Gmelin,

Buccinum tessellatum, Gmelin.

Buccinum maculosum, Gmelin.

Cassidea fasciata, Bruguière.

Cassis fasciata, Lamarck.

Hab. Australia.

There are three peculiarities of character in this species which distinguish it in an eminent degree from any other. The first consists of a necklace-like row of small spinous nodules just within the base of the spire; the second feature of interest is the dorsal bands of articulated semilunar spots, which are presented in all stages of growth; and the third is that of a row of spinous nodules upon the flattened surface of the outer lip. In form the *C. spinosa* has some general resemblance with the *C. flammea*, but it is a shell of much lighter growth and has no indication of any tubercles.

Species 10. (Mus. Cuming.)

CASSIS TESTICULUS. *Cass. testā suboblongo-ovatā, crassā, ponderosā, Cypræiformi, spirā brevissimā, apice acutā; anfractibus evaricosis, longitudinaliter tenuè et creberrimè plicato-liratis, supernè rotundatis, basin versus sulcatis; columellā callosā, undique plicato-rugatā, labro crassè reflexo, intus dentato, aperturā elongatā, angustā; livido-violascente, purpureo-fusco longitudinaliter undatā et maculatā, liris dorsalibus albidis, columellā labroque rufescentibus, posteriore ponè nigro-maculato.*

THE PURSE HELMET. Shell somewhat oblong-ovate, thick, ponderous, Cowry-shaped, spire very short, sharp at the apex; whorls destitute of varices, longitudinally finely and very closely plicately ridged, rounded at the upper part, grooved towards the base; columella callous, plicately wrinkled throughout, lip thickly reflected, toothed within, aperture elongated and narrow; livid violet, longitudinally waved and spotted with purple brown, dorsal ridges whitish, columella and lip reddish, the latter spotted behind with black.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 32.

Buccinum testiculus, Linnæus.

Cassidea testiculus, Bruguière.

Hab. West Indies.

Variety β . (Fig. 10, a.)

Testa subpyriformis, supernè crassissima, turgida, plicato-tuberculata.

Shell somewhat pear-shaped, very thick, swollen, and plicately tubercled round the upper part.

Cassis plicata, Martini.

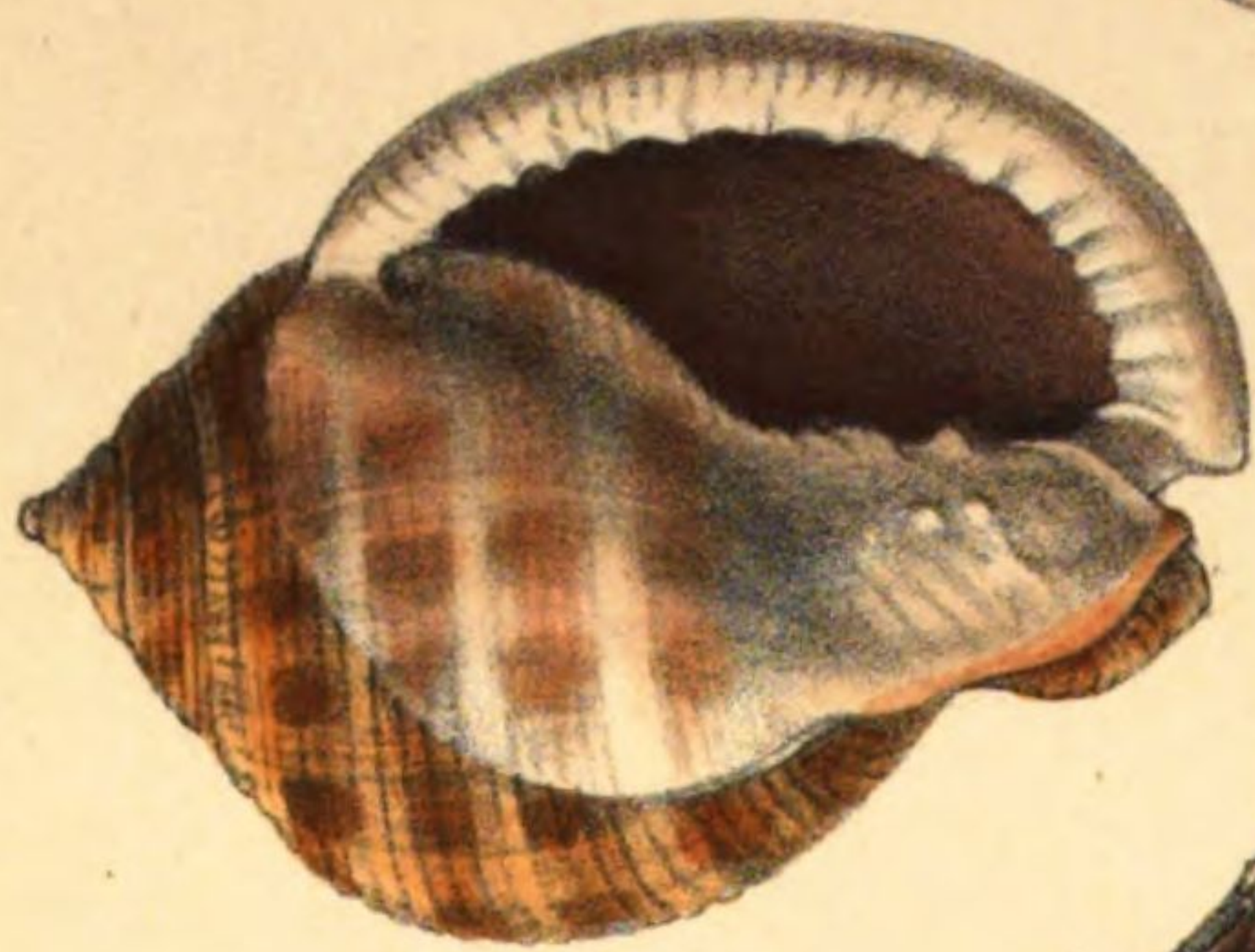
Buccinum plicatum, Dillwyn,

Cassidea crumena, Bruguière.

Cassis crumena, Lamarck.

Hab. West Indies.

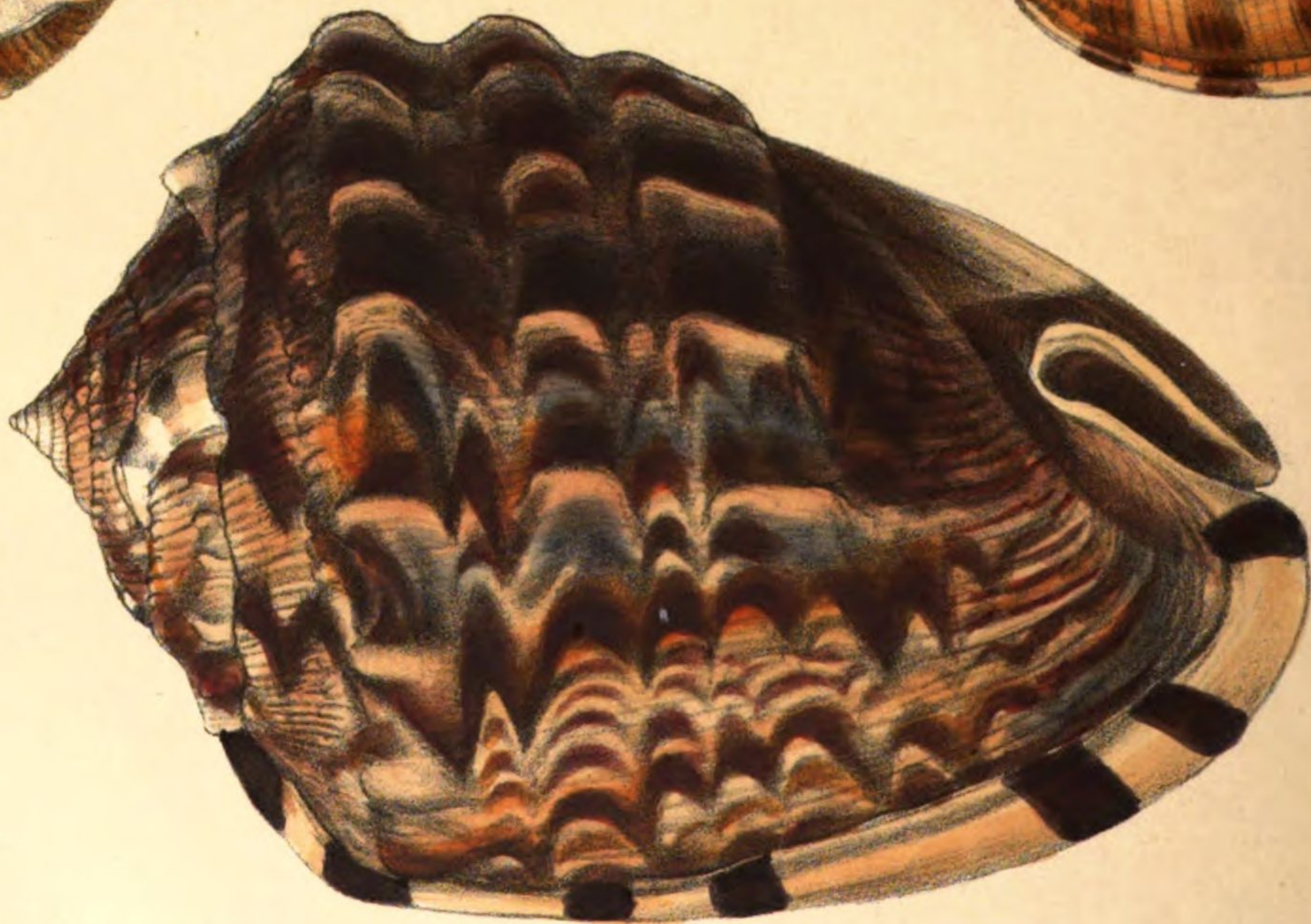
M. Kiener has very truly indicated these to be varieties of the same species, the latter being of a very thick swollen callous growth, plicately tubercled round the upper part, but agreeing in the minutest detail with the former. Both are from the same locality.



11. a.



12. b.



12. a.



11. b.

CASSIS.

PLATE V.

Species 11. (Mus. Cuming.)

CASSIS SABURON. *Cass. testā ovatā, ventricosā, spirā breviusculā, apice subpapillari; anfractibus evaricosis rotundatis, transversim undique creberrimè sulcatis, margine superiori crenulatis; columellā callosā, rugis brevibus perpauca obliquis, labro subirregulariter dentato-lirato; pallidè cinereā aut fulvescente, obscure quinquefasciatā, fasciis indistinctè quadrato-maculatis, maculis ponè varices intensè rufo-castaneis.*

THE SABURON HELMET. Shell ovate, ventricose, spire rather short, apex slightly papillary; whorls destitute of varices, rounded, transversely very closely grooved throughout, crenulated at the upper margin; columella callous, with a very few short oblique wrinkles, lip somewhat irregularly dentately ridged; pale ash or light fulvous colour, obscurely five-banded, bands indistinctly square-spotted, spots behind the varices dark reddish chesnut.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 36.

Le Saburon, Adanson.

Cassidea Saburon, Bruguière.

Buccinum Saburon, Dillwyn.

Eadem. *Cassis pomum*, Schubert and Wagner.

Hab. Japan (on the sands); Dr. Siebold.

Mainly distinguished by its close transverse grooves and rounded form; the spots are often much obscured, excepting behind the marginal varix, where in comparison they are unusually dark.

Martini has a very excellent figure of this species (Conch. Cab. vol. 2. pl. 34. f. 350) referred to by Lamarck under the head of *C. granulosa* (*C. inflatum*), and the figure in a vignette, f. 1-2 at p. 10, of the same work to which M. Deshayes refers for *C. Saburon*, appears to correspond with one not hitherto described, which I propose to distinguish by the name *C. pila*.

Species 12. (Mus. Cuming.)

CASSIS FLAMMEA. *Cass. testā oblongo-ovatā, vix trigonā, spirā breviusculā, apice acutā; anfractibus univaricosis, longitudinaliter tenuiter plicato-rugatis, rugis medium versus ætate obsoletis, anfractuum parte superiori vix angulatis, tuberculorum seriebus tribus aut pluribus armatis, tuberculis lateraliter compressis, labrum versus obsoletioribus; columellā concaviusculā, rudè rugatā, labro externo fortiter dentato; lacteā, dorso griseo-cærulescente nebulosā, castaneo longitudinaliter flammata, varicibus maculis grandibus nigris tinctis.*

THE FLAMED CASSIS. Shell oblong-ovate, scarcely triangular, spire rather short, sharp at the apex; whorls one-varicose, longitudinally finely plicately wrinkled, the wrinkles becoming obsolete towards the middle with age, upper part of the whorls but slightly angulated, armed with three or more rows of tubercles, which are laterally compressed and more obsolete towards the lip; columella rather concave, rudely wrinkled, outer lip strongly toothed; cream-coloured, clouded at the back with greyish blue, longitudinally flamed with chesnut, varices stained with large black blotches.

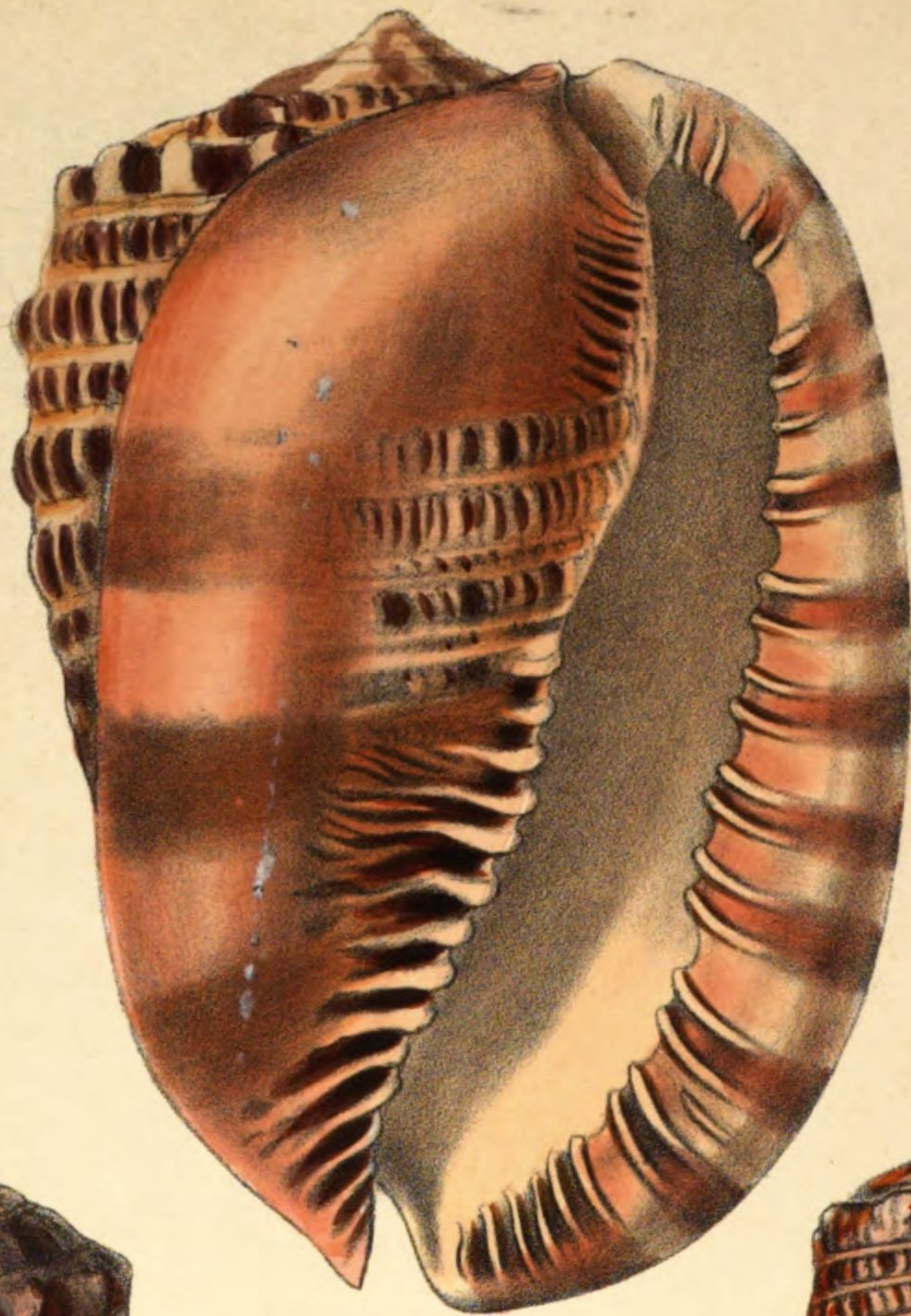
LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 22.

Buccinum flammeum, Linnæus.

Cassidea flammea, Bruguière.

Hab. — ?

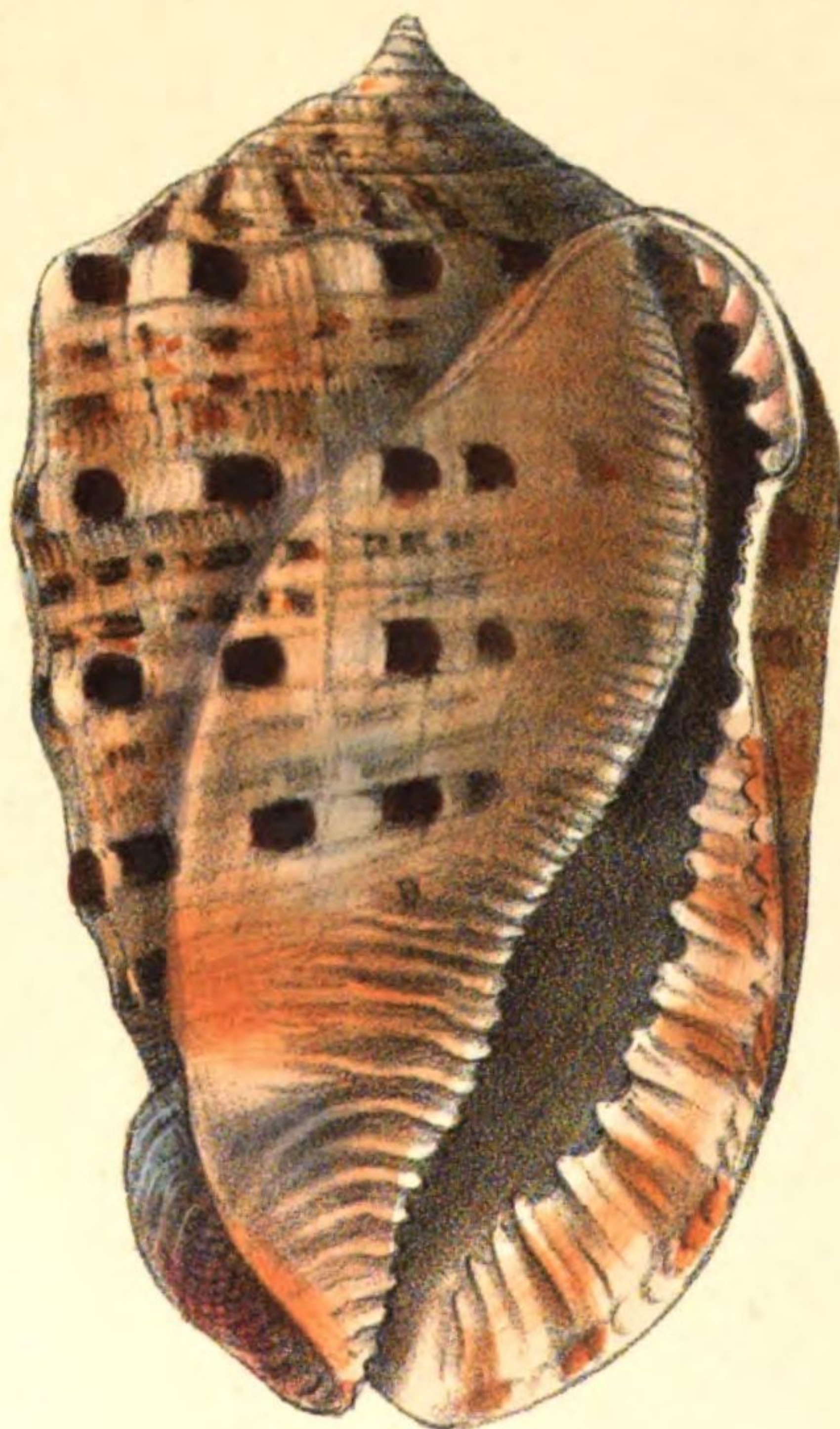
The peculiar oblong oval form of this species, which is of constant occurrence, fully distinguishes it from *C. tuberosa*, of which M. Kiener intimates his opinion that it is a variety. There is moreover a uniform variation in the sculpture, which, in the species under consideration, rather assumes the nature of plicated wrinkles; the tubercles are more numerous, smaller, and more compressed.



13. a.



13. b.



14.



13. c.

CASSIS.

PLATE VI.

Species 13. (Fig. *a*, Mus. Saul; Fig. *b* and *c*, Mus. Cuming.)

CASSIS TENUIS. *Cass. testā ovato-oblongā, cylindraceā, Cypræiformi, tenuiculā, spirā brevissimā, anfractibus lævibus, transversim regulariter sulcatis, sulcis binis, interstitiis longitudinaliter obtusè liratis, tuberculorum seriebus quatuor armatis; columellā vix concavā, supernè et infernè rugatā, labro externo peculiariter reflexo, fortiter dentato-lirato, liris binis; aperturā elongatā, extremitatibus ambabus canaliculatis; purpureo-fuscā, livido-cæruleo nebulatā, sulcis lirisque dorsalibus cæruleo-albidis, columellā purpureo-nigrā, rugis albis, labro columellari basin versus rufo vividè tinctā, areā pone labrum externum purpureo-nigro conspicuè maculatā.*

THE THIN CASSIS. Shell ovately-oblong, cylindrical, Cowry-shaped, rather thin, spire very short, whorls smooth, transversely regularly grooved, grooves two and two, interstices longitudinally obtusely ridged, armed with four rows of tubercles; columella slightly concave, wrinkled above and below, outer lip peculiarly reflected, strongly dentately ridged, ridges in pairs, aperture elongated, both extremities channelled; purple-brown, clouded with livid blue, dorsal grooves and ridges white, columella stained towards the base with bright red, area behind the outer lip conspicuously blotched with purple-black.

GRAY, Wood Index Test. Supp. pl. 4. f. 4.

Cassis Massenæ, Kiener.

Hab. Gallapagos Islands (in sandy mud at the depth of six fathoms); Cuming.

M. Deshayes in his notice of this species likens it to the *C. testiculus*; the accompanying figure of a mature specimen shows, however, that it is much more nearly allied to the *C. rufa*. In its most advanced stage of growth the shell is comparatively thin, the lip being curled back without any great leposit of enamel; the general form is more

cylindrically oblong than that of *C. rufa*, and the aperture is wider. The colour and marking are extremely pretty.

The *C. tenuis*, of which a very small but accurate figure was published by Mr. Wood in his supplement to the 'Index Testacologicus,' has been very generally mistaken by English collectors for Lamarck's *C. pennata*, which is merely the young of *C. rufa*.

Species 14. (Mus. Saul.)

CASSIS COARCTATA. *Cass. testā cylindraceo-ovatā, crassiusculā, spirā brevi, anfractibus evaricosis, transversim tenuissimè striatis, costis nodulosis cingulatis, quarum quatuor cæteris majoribus; columellā breviplicatā et obliquè subtiliter rugatā, labro intus dentato-lirato, supernè coarctato, non reflexo, aperturā elongatā, angustā; cinereo-albidā, purpureo-fusco tinctā, nodulis nonnullis albicantibus, columellā labroque rufescentibus.*

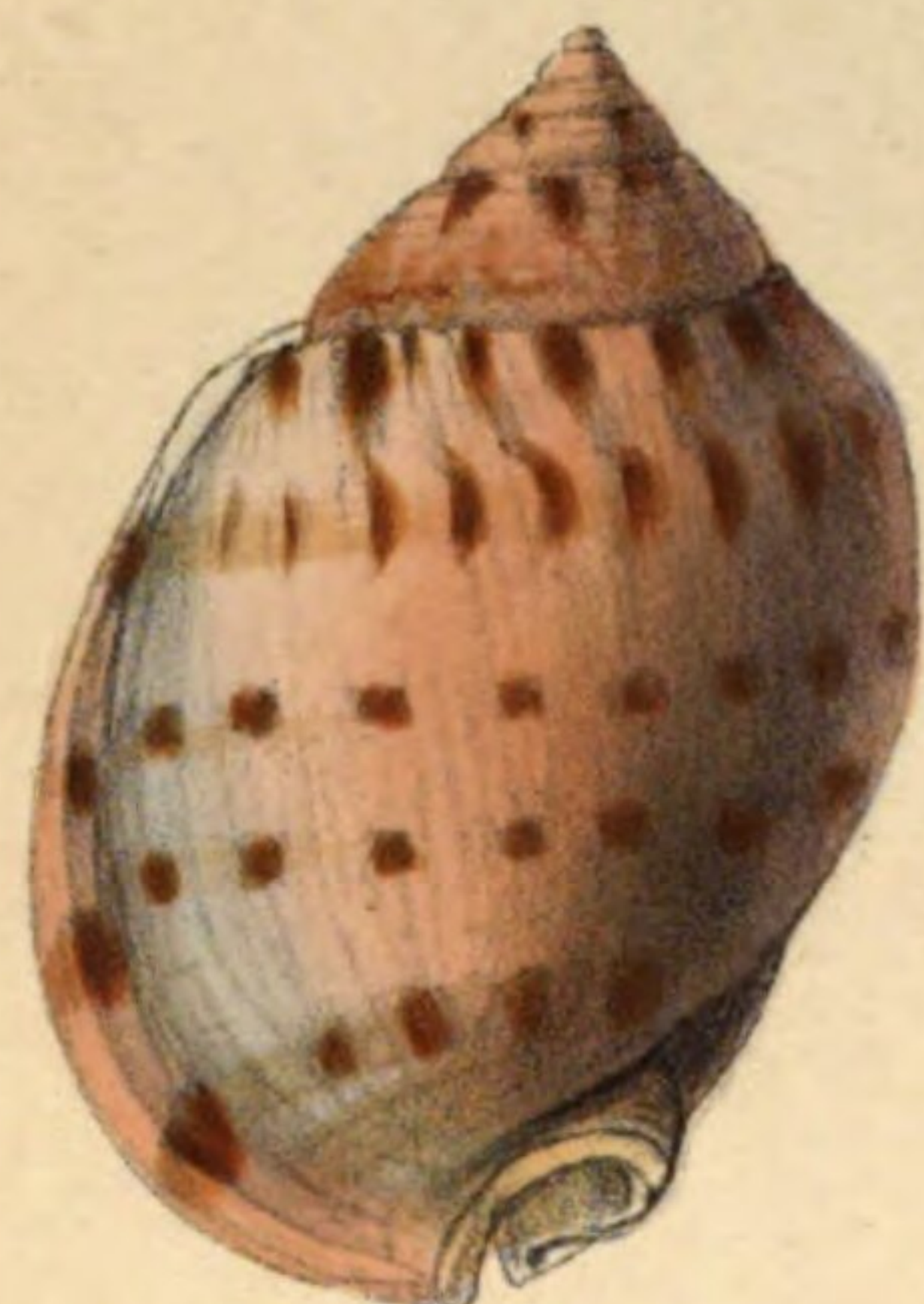
THE CONTRACTED HELMET. Shell cylindrically ovate, rather thick, spire short, whorls destitute of varices, transversely very finely striated, encircled by nodulous ribs, four of which are larger than the rest; columella shortly plicated, and obliquely finely wrinkled, lip dentately ridged within, contracted at the upper part, not reflected, aperture elongated and narrow; ash-white, stained with purple-brown, some of the nodules whitish, lip and columella reddish.

GRAY, Wood Index Test. Supp. pl. 4. f. 5.

Cypræacassis coarctata, Stutchbury.

Hab. Gallapagos Islands, Pacific Ocean (in crevices of rocks); Cuming.

The contraction of the outer lip, which is always constant, is a singular feature in this species. For the magnificent specimen here represented, which is of unusually large size, I am indebted to the choice collection of Miss Saul.



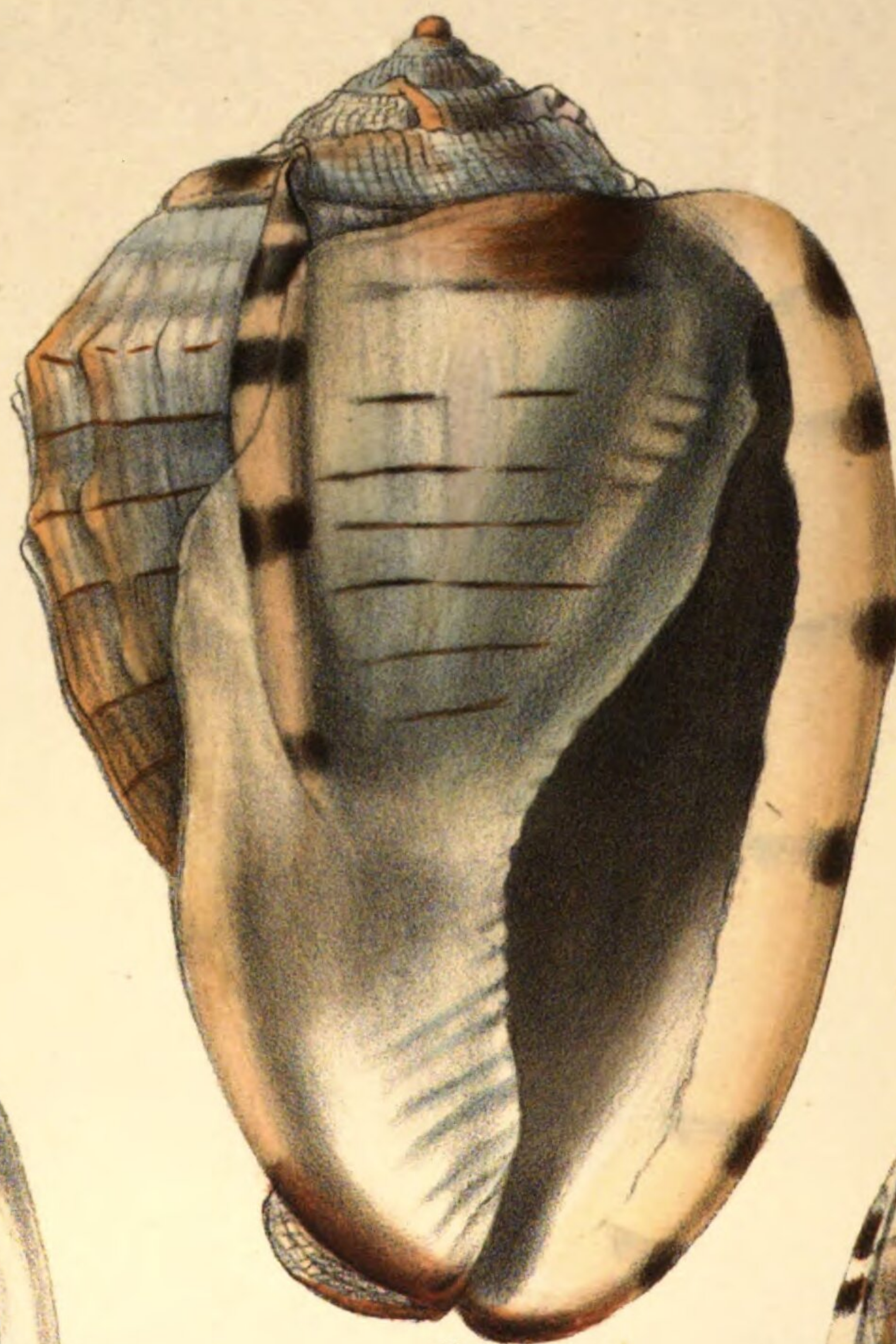
16. a.



15. a.



16. b.



17.



15. b.



15. d.



15. c.

CASSIS.

PLATE VII.

Species 15. (Mus. Cuming.)

CASSIS VIBEX. *Cass. testā elongato-ovatā, basi peculiariter effusā, spirā subacuminatā; anfractibus evaricosis, convexis, suboblique convolutis, lævigatis, politis, columellā incrassatā, basi uniplicatā, labro basi quadrispinoso; carneo-cinerascente, obscure fasciatā, flammis fulvescentibus longitudinaliter pictā, lineisque indistincte fusco-punctatis cingulatā; columellā eburneā, labro castaneo intense maculato.*

THE STRIPED HELMET. Shell elongately ovate, peculiarly effused at the base, spire somewhat acuminate; whorls destitute of varices, convex, somewhat obliquely convoluted, smooth, polished, columella thickened, one-plaited at the base, lip four-spined at the base; fleshy ash-colour, obscurely banded, painted longitudinally with light fulvous flames and encircled with indistinctly brown-dotted lines; columella ivory-white, lip intensely spotted with chesnut.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 38.

Buccinum vibex, Linnæus.

Cassidea vibex, Bruguière.

Variety β . (Fig. 15, a.)

Testa minor, valde incrassata, anfractibus supernè nodosis, nodis in plicis sæpè descendentibus.

Shell smaller, very much thickened, with the whorls noded round the upper part, nodules frequently descending in folds.

Buccinum erinaceus, Linnæus.

Buccinum nodulosum, Gmelin.

Buccinum biarmatum, Dillwyn.

Cassidea erinaceus, Bruguière.

Cassis erinaceus, Lamarck.

Hab. Philippine and Pacific Islands; Cuming.

The species *C. vibex* and *torquata* were confounded indiscriminately by Linnæus, Lamarck, and others, to judge by the reference made to Martini's figures, the smooth specimens being set apart under the specific title of *vibex*, the noded variety under that of *erinaceus*; it will, however, be seen that there are two very distinct species, both equally distinguished in having the upper portion of the whorls sometimes rounded, sometimes strongly noded or plicately tubercled. The name *erinaceus* is therefore suppressed, as being founded on the

thickened noded variety of either species, and that which had not been recognised is named *C. torquata*.

Species 16. (Mus. Cuming.)

CASSIS RECURVIROSTRUM. *Cass. testā ovatā, tenuiculā, spirā subacuminatā, anfractibus evaricosis, lævibus, supernè concavo-declivibus, plicis tenuibus interdum obsoletis e suturis descendentibus; columellā subampliter uniplicatā et obtusè granosā, labro subtiliter dentato-lirato; pallidè fulvo-spadiceā, maculis parvis rufescente-fuscis subquadratis distantibus seriatim notatā.*

THE RECURVED-BEAK HELMET. Shell ovate, rather thin, spire somewhat acuminate, whorls destitute of varices, smooth, concavely slanting round the upper part, with thin plaits, sometimes obsolete, descending from the sutures; columella somewhat largely one-plaited and obtusely grained, lip finely dentately ridged; light fulvous bay, marked with rows of small rather square distant reddish brown spots.

Buccinum recurvirostrum, Wood, Index Test. pl. 22. f. 30.

Hab. Raines' Island, Torres Straits; Capt. Ince.

M. Kiener figures this shell as the young of *C. inflata* (*C. granulosa*, Lamarck), from which, it is scarcely necessary to add, it is perfectly distinct. The shell here represented, from Mr. Cuming's collection, is one of mature growth; and I take it to be the *Buccinum recurvirostrum* of Wood, founded on Lister's figure, Hist. Conch. t. 1016. f. 75. It may be observed that this species is from New Holland, whilst the *C. inflata* is a native of the West Indies.

Species 17. (Mus. Cuming.)

CASSIS FIMBRIATA. *Cass. testā oblongo-ovatā, plerumque tenuiculā, spirā subproductā, apice papillari, anfractibus univaricosis, longitudinaliter irregulariter tenuiplicatis, striis transversis prope apicem basinque decussatis, parte superiori dorsali cingulis nodosis tribus armatā, nodis posticè compressis; columellā arcuatā, leviter rugatā, labro externo vix obsoletè dentato; pallidè lacteā, fasciis sex fulvescentibus, lineisque fuscis interruptis, octo aut pluribus cingulatā, varicibus fuscomaculatis.*

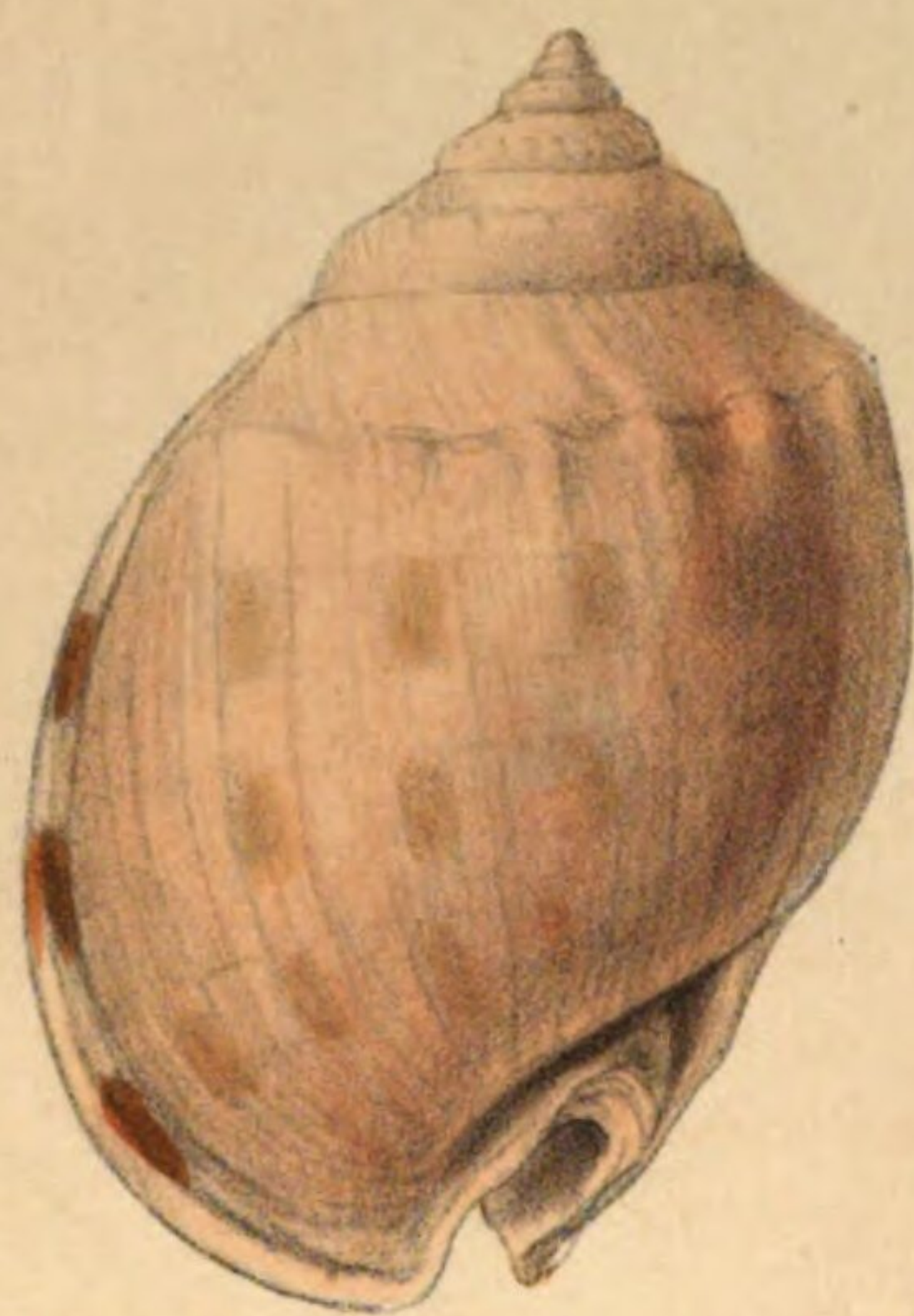
THE FIMBRIATED HELMET. Shell oblong-ovate, generally rather thin, spire somewhat produced, papillary at the apex, whorls one-varicose, longitudinally irregularly finely plicated, crossed near the base and apex with transverse striæ, upper dorsal part of the shell armed with three rows of posteriorly compressed nodules; columella curved, but slightly wrinkled, outer lip scarcely obsoletely dentated; pale cream-colour, encircled by six light fulvous bands and eight or more interrupted brown lines, varices stained with large brown blotches.

QUOY and GAIMARD, Voy. de l'Astrolabe, Zool. vol. ii. p. 596. pl. 43. f. 7, 8.

Hab. New Holland.

The form of this species approaches nearest to that of the *C. fasciata* and *flammata*; its principal features of distinction consist in the lip and columella being only very slightly wrinkled and dentated, and in the shell being encircled with brown interrupted lines.

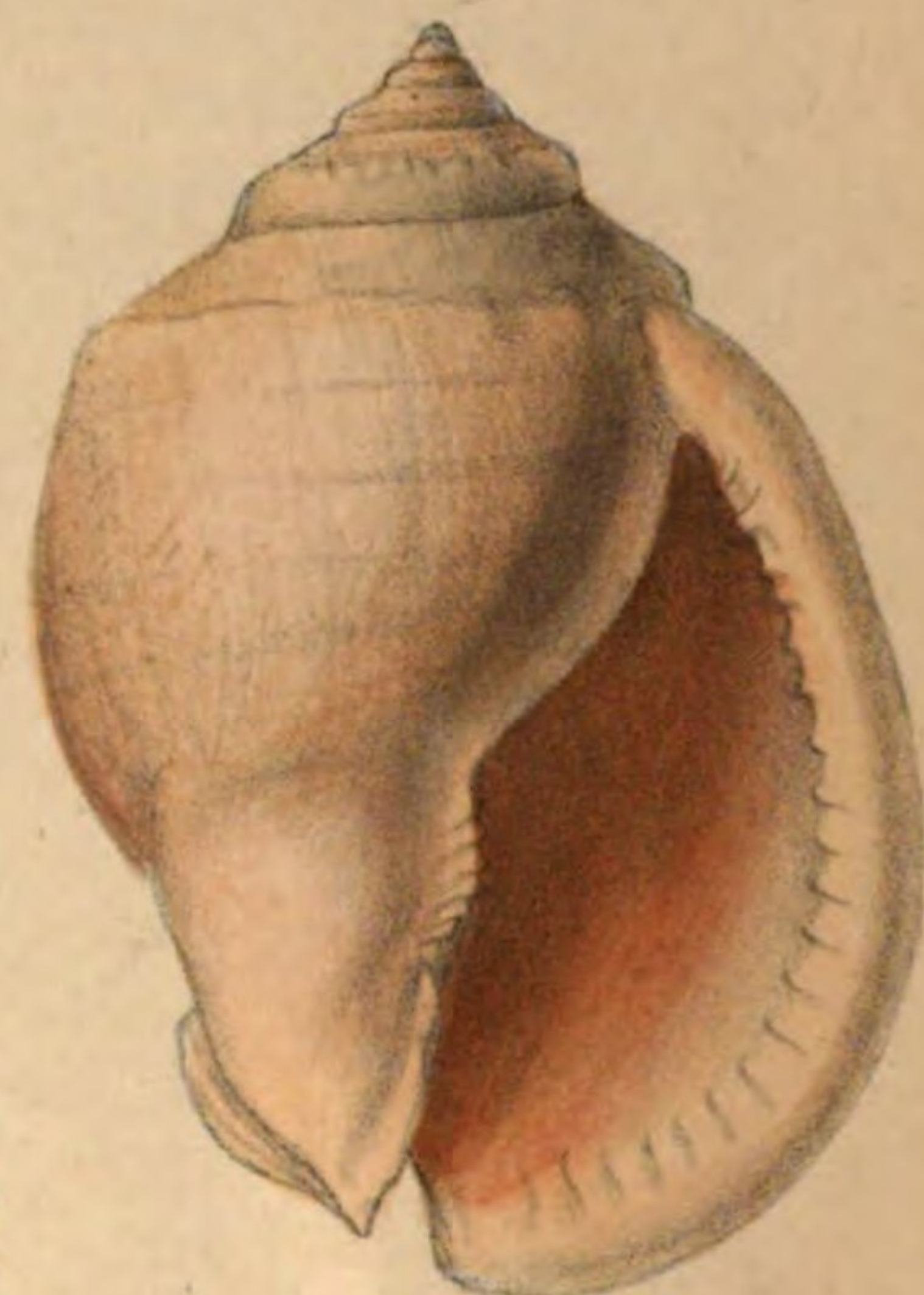
The name *C. fimbriata* was applied in general terms by Martini in reference to the *C. vibex* and *torquata*, but not upon the binomial principle of nomenclature introduced by Linnæus.



19 a.



18. a.



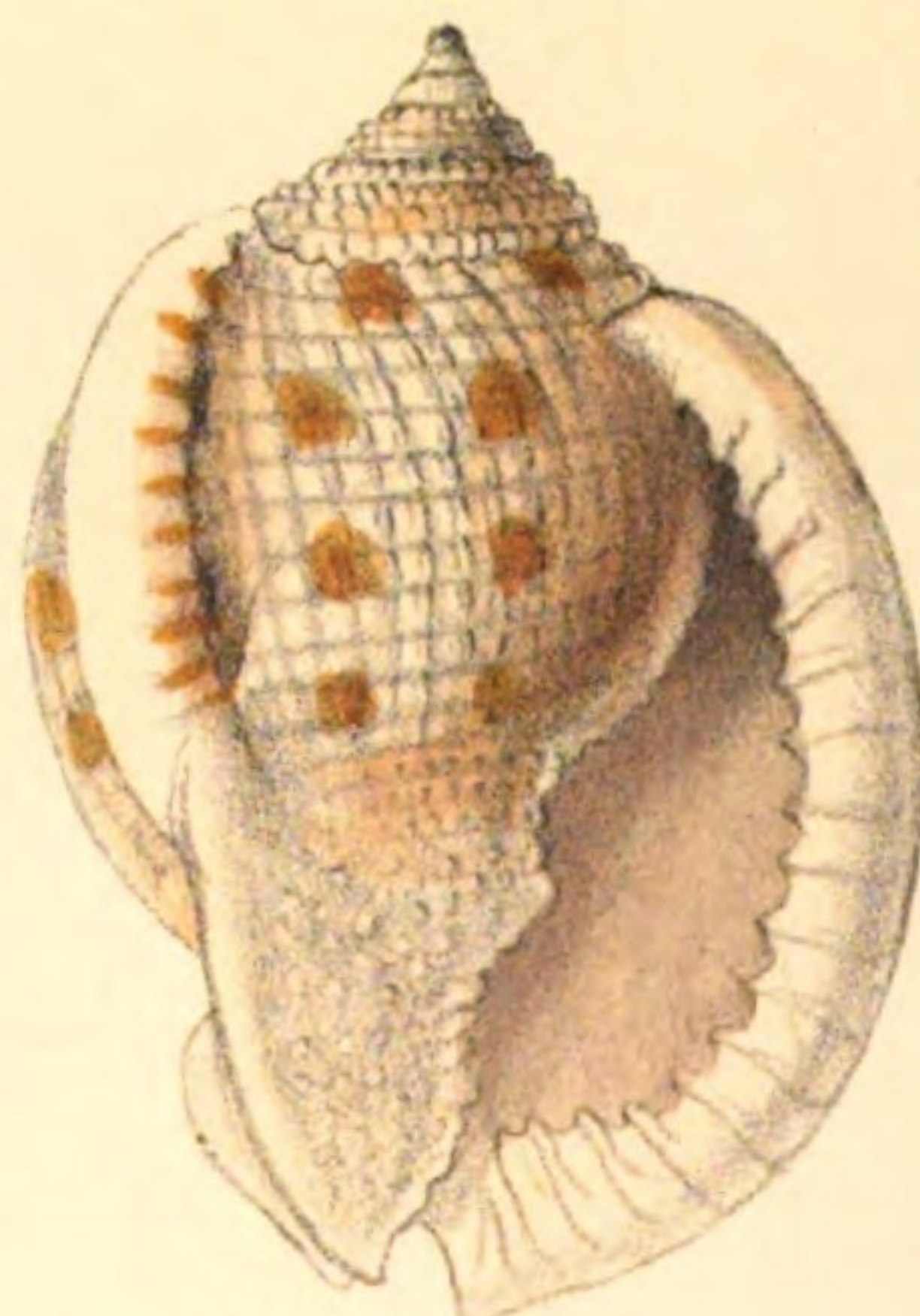
19. b.



20 a.



20. b.



18. b.



20. c.

CASSIS.

PLATE VIII.

Species 18. (Mus. Hamilton.)

CASSIS ABBREVIATA. *Cass. testā subgloboso-ovatā, crassā, spirā breviusculā, acuminatā, apice subpapillari; anfractibus, ultimo interdum univaricoso, subrotundis, striis longitudinalibus elevatis, sulcis striisve incisis transversis decussatis, liris apicem versus conspicuè granosis; columellā fortiter granosā, labro valdè incrassato, prope basin leviter effuso, intus dentato-lirato; eburneā, maculis parvis aurantio-fuscis quadratis vel inæqualibus distantibus plus minus obscure pictā, interdum immaculatā, labri margine retrorso fusco radiato.*

THE ABBREVIATED HELMET. Shell somewhat globosely ovate, thick, spire rather short, acuminate, apex rather papillary; whorls, the last being sometimes one-varicose, somewhat rounded, decussated with longitudinal raised striæ and transverse engraved striæ or grooves, ridges conspicuously granose towards the apex; columella strongly granose, lip excessively thickened, slightly effused towards the base, dentately ridged within; ivory white, more or less obscurely painted with small orange-brown spots which are square or unequal and distant, sometimes unspotted, reflected edge of the lip rayed with brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 30.

Eadem. *Cassis lactea*, Kiener.

Hab. Acapulco.

When Lamarck introduced this species, it escaped his notice, as subsequently that of his commentators, that he had already referred to a characteristic figure of it in Martini (Conch. Cab. vol. ii. pl. 34. f. 351, 2) among the synonymy of his *C. granulosa* (*C. inflata*). It presents itself under so many different aspects, that it is somewhat difficult to recognise the species in all its varieties without a comparison of numerous specimens. M. Kiener's *C. lactea* is undoubtedly a variety of it, and the same may be said, with less certainty in the absence of figures, of the *C. centiquadrata* and *doliata* described in 1811 by Valenciennes in the Zoology of the Voyage of Humboldt and Bonpland.

Species 19. (Mus. Metcalfe.)

CASSIS PAUCIRUGIS. *Cass. testā ovatā, spirā subacuminatā, apice acutā; anfractibus evaricosis, lævibus, nitidis, longitudinaliter irregulariter tenuissimè inciso-striatis,*

apicem versus decussatis, supernè angulato-declivibus, ad angulum obsoletè nodosis; columellā vix plicatā, labro intus dentato-lirato; eburneā, politā, maculis quadratis fulvescentibus distantibus exilissimè tinctā, maculis saturatioribus pone labrum; aperturæ fauce fulvescente-croceā.

THE FEW-WRINKLED HELMET. Shell ovate, spire somewhat acuminate, sharp at the apex; whorls destitute of varices, smooth, shining, longitudinally irregularly very finely marked with engraved striæ, decussated towards the apex, angularly slanting round the upper part, obsoletely nodose at the angle; columella scarcely plicated, lip dentately ridged within; ivory white, polished, very faintly stained with distant square fulvous spots, which are darker behind the lip; interior of the aperture fulvous saffron colour.

MENKE, Moll. Nov. Hollandiæ, p. 23. no. 107.

Hab. West coast of New Holland; Menke.

The *Cassis paucirugis* was described about five years ago by Dr. Menke of Pyrmont, Germany, in his Synopsis of Shells from New Holland, and kindly made known to me by the transmission of his original specimen. From its very discoloured and bleached appearance the species was regarded with some doubt, but a comparison of further specimens from the collections of Mr. Cuming, Mr. Metcalfe, and Mr. Hanley enables me to add satisfactorily to the characters already adduced by Dr. Menke. In the specimen here represented there is a perceptible indication of square fulvous spots beneath its ivory enamelled surface, the columellar lip remaining of as clear a porcelain white as that of the *Ovulum ovum*, and the interior is distinguished by a warm, fulvous saffron hue.

The *C. paucirugis* has not hitherto been illustrated, and is but little known. It is impossible to identify a species with any degree of certainty without the aid of a figure, and this, like many more whose existence has only been recorded by the simple technicalities of a diagnose, has been waiting in obscurity to be published under a more intelligible aspect.

Species 20. (Mus. Brit.)

CASSIS RUFA. *Cass. testā ovatā, Cypræiformi, crassissimā, ponderosā, spirā brevissimā, anfractibus evari-*

cosis, longitudinaliter subtiliter et creberrimè plicato-corrugatis, tuberculorum seriebus tribus aut pluribus cingulatis; columellâ concaviusculâ, undique tenuè rugatâ, labris valdè incrassatis, externo fortiter rugato, aperturâ elongatâ et angustâ, extremitatibus ambabus profundè canaliculatis; livido-rufescente, fusco alboque maculatâ, aperturâ vividè coccineo-rufâ, hic illic nigricante tinctâ, rugis albidis.

THE RED HELMET. Shell ovate, Cowry-shaped, very thick, ponderous, spire very short, whorls destitute of varices, longitudinally finely and very closely plicately wrinkled, encircled with three or more rows of tubercles; columella slightly concave, finely wrinkled throughout, lips extremely thickened, the outer lip strongly wrinkled, aperture elongated and narrow, with both the extremities deeply channelled; livid red, spotted with brown and white, aperture deep scarlet-red, tinged in parts with black, wrinkles whitish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 30.

Buccinum rufum, Linnæus.

Cassidea rufa, Bruguière.

Testa juvenis.

Buccinum pullum, Born.

Buccinum pennatum, Gmelin.

Cassidea pennata, Bruguière.

Cassis pennata, Lamarck.

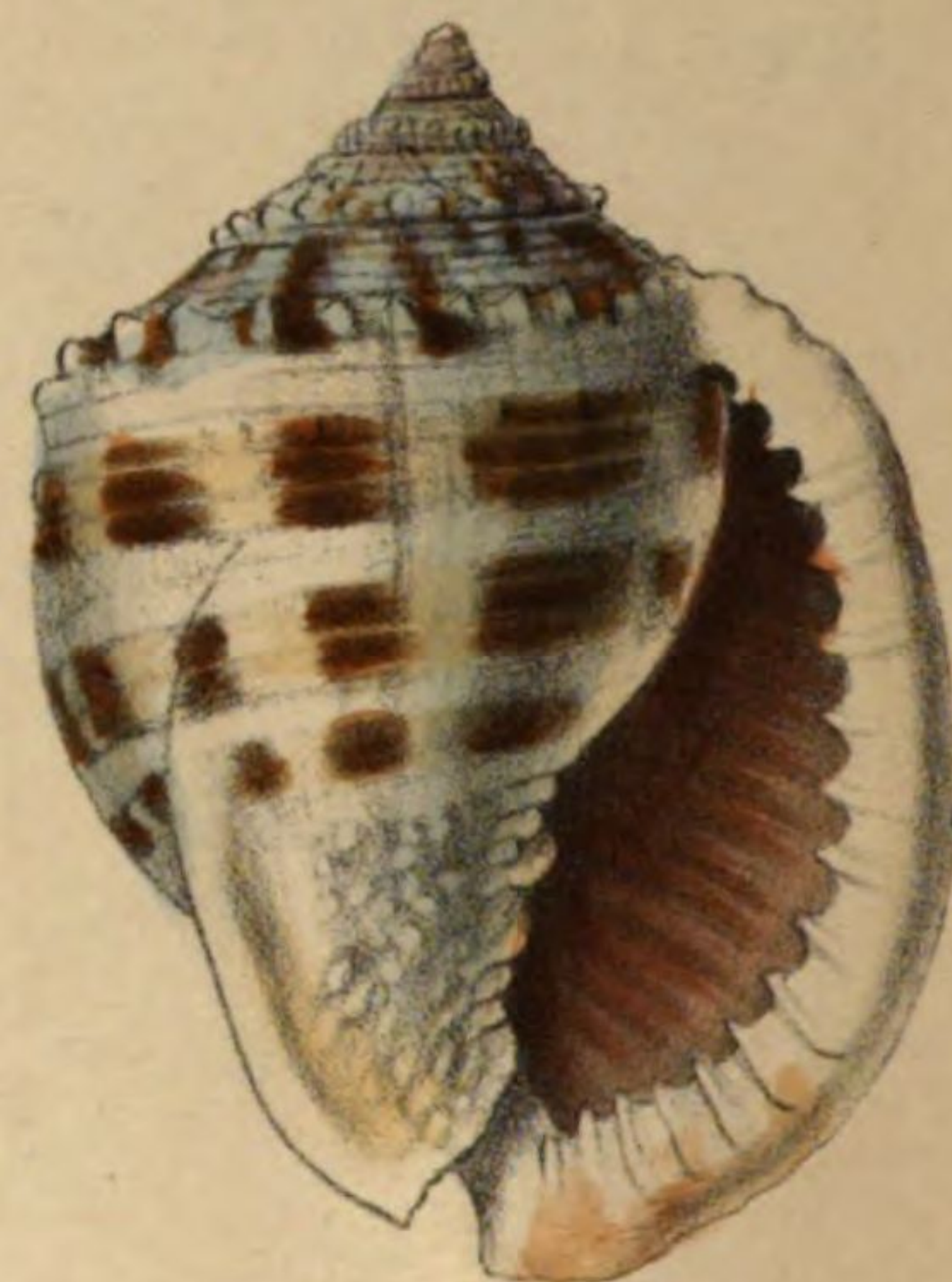
Hab. Moluccas, &c. Isle of Annaa, Pacific Ocean (on the reefs); Cuming.

The *Cassis rufa* appears to be the species most in request for the manufacture of ordinary cameos, owing to the great thickness of the enamel, which is frequently deposited in a dozen to twenty layers. Large quantities of these shells are imported for the purpose, and the species has become a common article of merchandise.

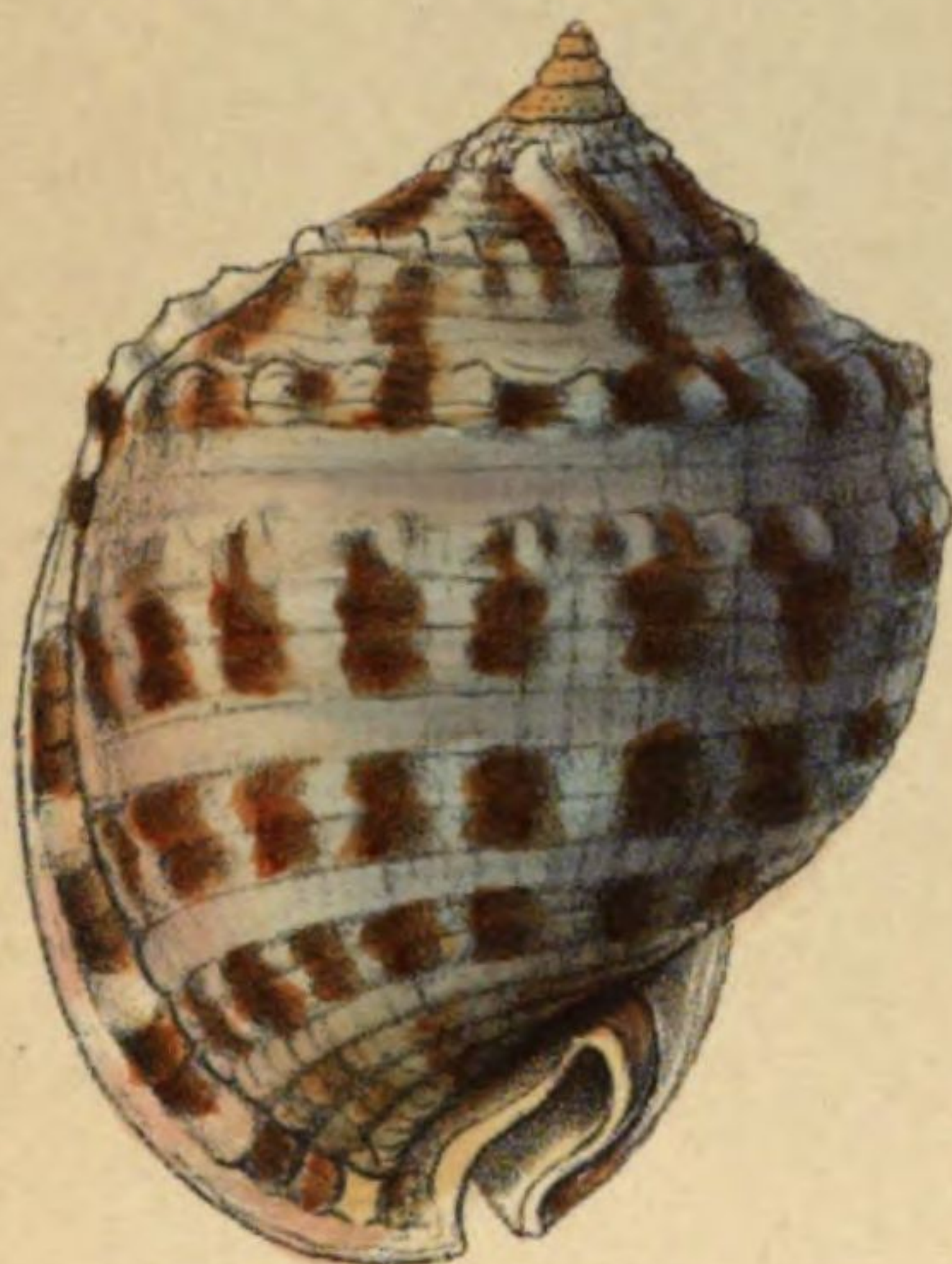
The *Cassis pennata* of Lamarck, for the illustration of which the author refers to Martini's Conch. Cab. vol. ii. pl. 36. f. 372-3, is undoubtedly the young of *C. rufa*.



21.



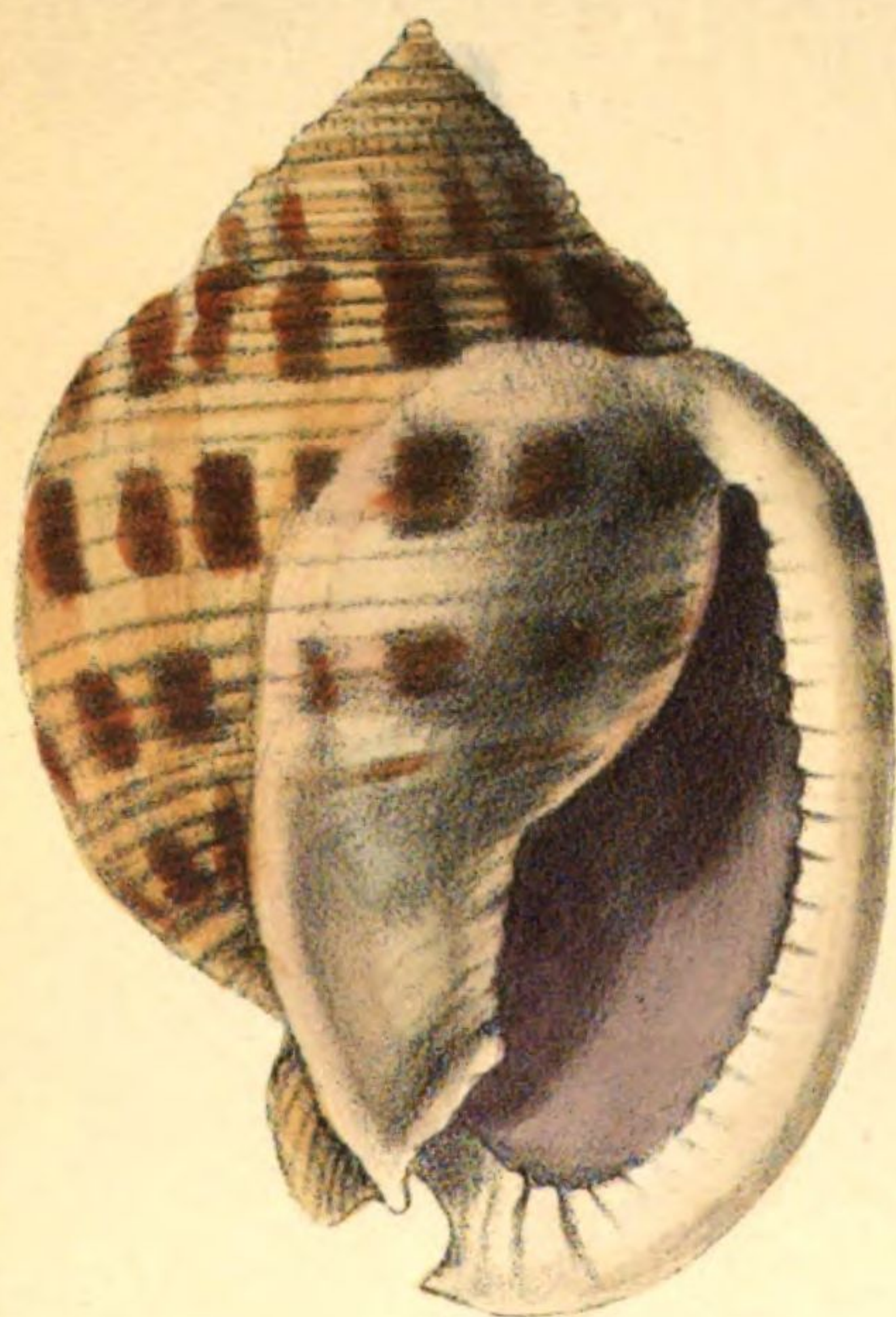
22. f.



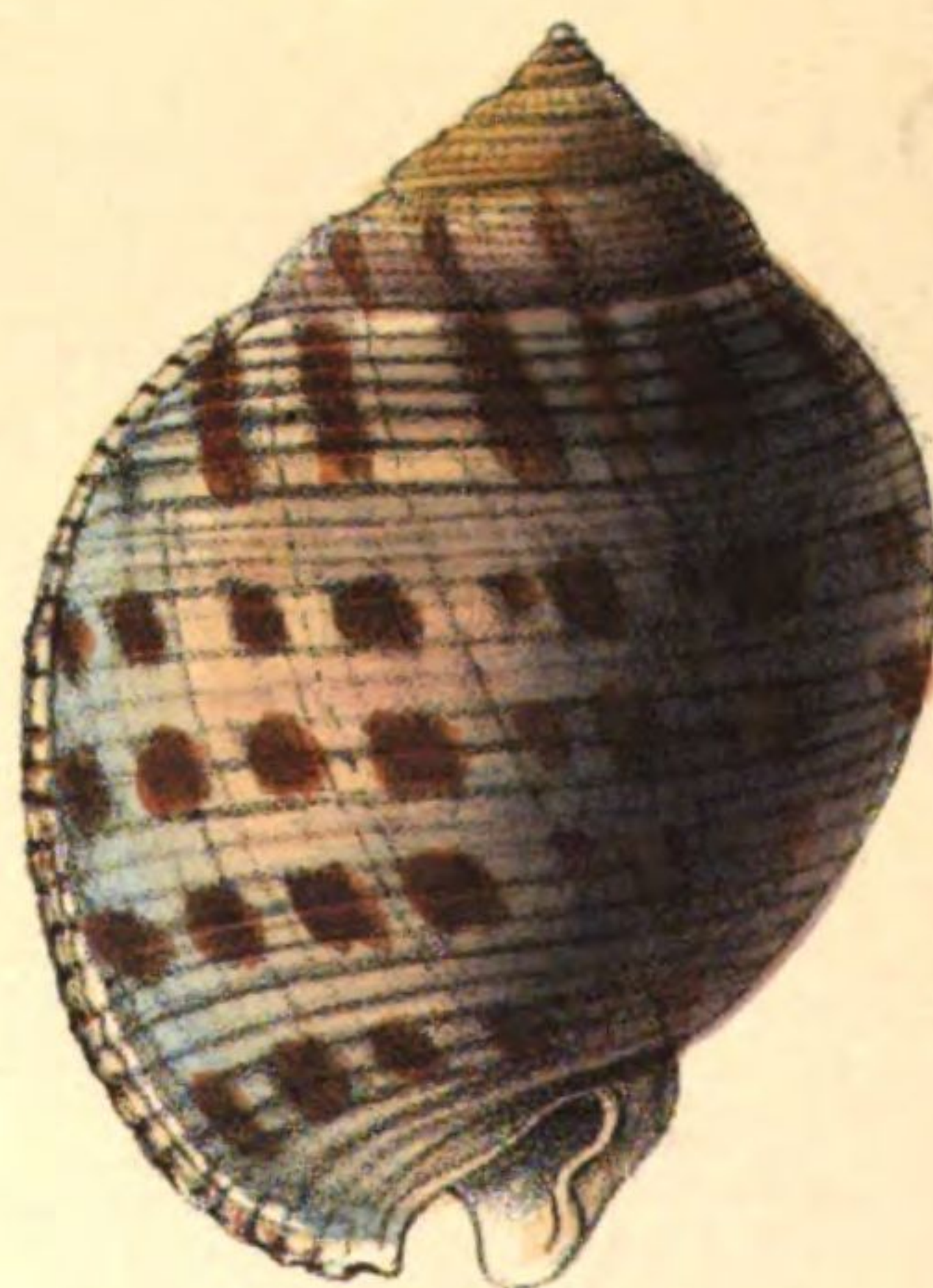
22. a.



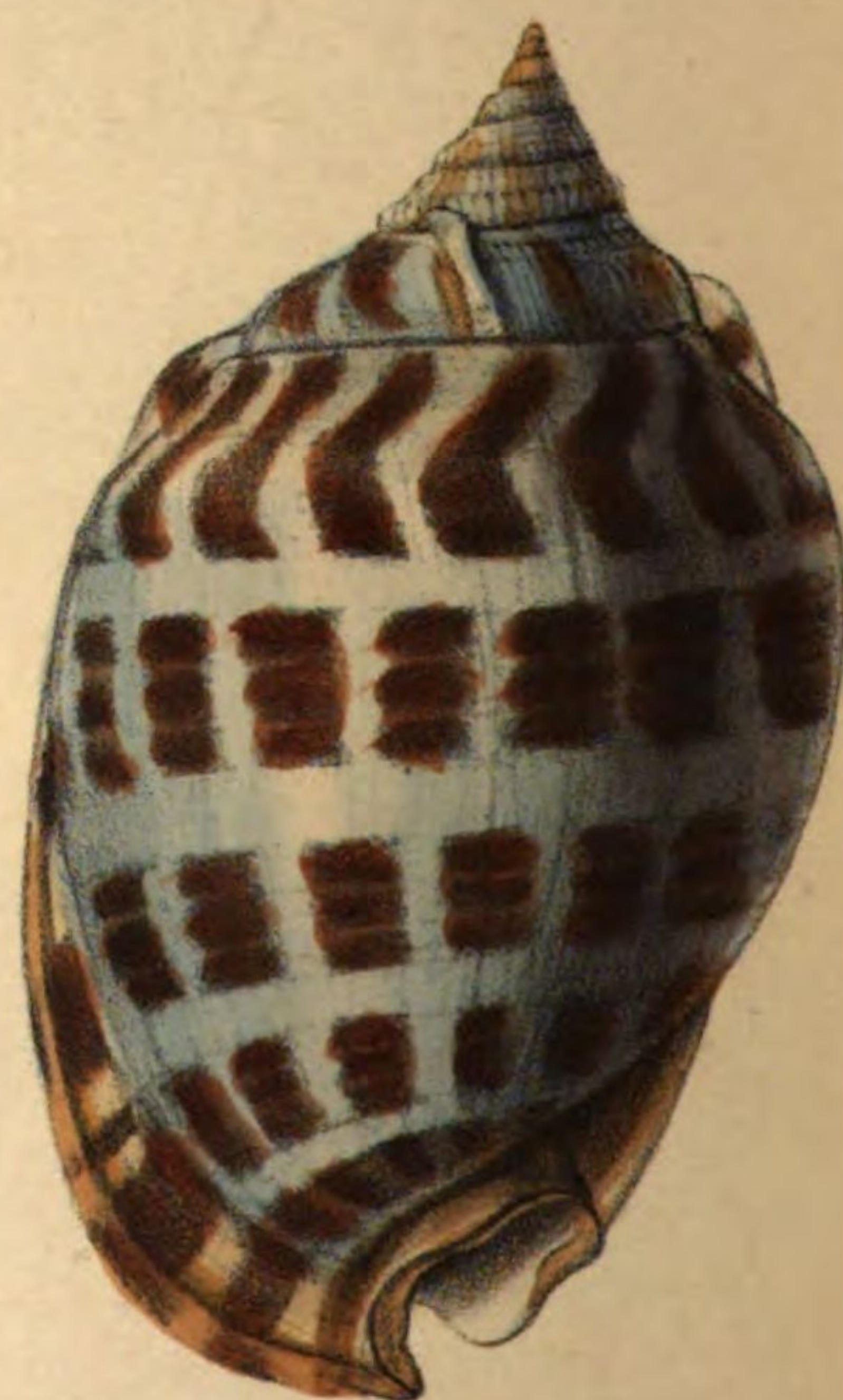
22. c.



23. a.



23. b.



24.

CASSIS.

PLATE IX.

Species 21. (Mus. Cuming.)

CASSIS PILA. *Cass. testā subgloboso-ovatā, spirā breviusculā, apice acutā; anfractibus evaricosis, transversim undique creberrimè inciso-striatis; columellā densè plicato-liratā, labro dentato-lirato; fulvo-albicante, maculis numerosis parvis quadratis rufo-fuscis seriatim pictā.*

THE BALL HELMET. Shell somewhat globosely ovate, spire rather short, sharp at the apex; whorls destitute of varices, very closely encircled throughout with engraved striæ; columella thickly plicately ridged, lip dentately ridged; fulvous white, painted with rows of numerous small square red-brown spots.

Hab. China.

A shell of rather light growth, globose in form, painted with neatly defined distant spots.

Species 22. (Fig. a and b. Mus. Hanley. Fig. c. Mus. Cuming.)

CASSIS INFLATA. *Cass. testā subgloboso-ovatā, tenuiculā, ventricosissimā, spirā acutā; anfractibus rotundatis, inflatis, lævigatis, transversim obsoletè sulcatis, apicem versus reticulatè striatis; columellā leviter plicatā et conspicuè granosā, labro reflexo, intus acutè brevilirato; cærulescente-albidā, fasciis quinque macularum rufo-fuscescentium cingulatā, maculis subquadratis, irregulariter interruptis.*

THE INFLATED HELMET. Shell somewhat globosely ovate, rather thin, extremely ventricose, spire sharp; whorls rounded, inflated, smooth, transversely obsoletely grooved, reticulately striated towards the apex; columella smoothly plicated and conspicuously granose, lip reflected, sharply shortly ridged within; bluish white, encircled by five bands of somewhat square and irregularly interrupted reddish-brown spots.

Variety β (Fig. a and b. Mus. Hanley.)

Testa multo minor, anfractibus supernè crebrè nodosis, nonnullis univaricosis.

Shell much smaller, with the whorls closely noduled round the upper part, some of them distinguished by a varix.

Buccinum inflatum, Shaw, Nat. Misc. v. 22. pl. 959.

Buccinum tessellatum, Chemnitz.

Cassidea granulosa, Bruguière.

Cassis granulosa, Lamarck.

Hab. Barbados.

The first authentic illustration of this species occurs in Shaw's Naturalist's Miscellany, 1789, with the name *Buccinum inflatum*. Ten years subsequently an equally characteristic figure of it was published by Chemnitz in his last volume of the Conchylien Cabinet under the title *Buccinum cassideum tessellatum*. These, however, were overlooked by Bruguière and Lamarck, who introduced the species with the name *granulosa*, and referred for illustration to Martini's figures, Conch. Cab. v. 2. f. 344—5 and 350—52, which also comprehend the *C. abbreviata* and *saburon*. Kiener, following in the steps of his predecessors in adopting the name *granulosa*, added much to the confusion by representing the *C. recurvirostrum* to be the young of it, and that both were merely varieties of the *C. sulcosa* of the Mediterranean, arising out of differences of age or sex. It does not appear that this crotchet of M. Kiener's was noticed in the new edition of Lamarck, and M. Deshayes errs in stating that the figures above alluded to in Martini, "can only be referred to this species." The shell Fig. 344-5 is without doubt a *C. inflata*, though presenting the unusual feature of a strong lateral varix, but fig. 350, is a variety of *C. saburon*, distinguished by the dark spots behind the reflected lip, and the shell, Fig. 351—2 is a pale variety of Lamarck's *C. abbreviata*.

The coronated variety of *C. inflatum* is very uniform and I am not aware that it exceeds the size of the specimen here figured.

Species 23. (Mus. Cuming.)

CASSIS JAPONICA. *Cass. testā ovatā, tenuiculā, ventricosā, inflatā, spirā breviusculā, acutā; anfractibus supernè rotundatis, transversim acutè sulcatis, sulcis supremis cæteris latioribus, striis subtilibus elevatiusculis longitudinalibus obliquis decussatis; columellā plicato-rugatā, rugis partim obsoletis, interruptis et obscure granulatis; labro dentato-lirato; albidā, maculis oblongo-quadratis inæqualibus castaneo-rufis quinquefasciatis.*

THE JAPAN HELMET. Shell ovate, rather thin, ventricose, inflated, spire rather short, sharp; whorls rounded at the upper part, transversely sharply grooved, uppermost grooves broader than the rest, decussated with very fine slightly elevated longitudinal oblique striæ; columella plicately wrinkled, wrinkles partially obsolete, interrupted and obscurely granulated; lip dentately toothed; whitish, encircled

with five bands of unequal oblong-square chesnut-red spots.

Hab. China and Japan (on the sands); Siebold.

A beautiful species strongly characterized by its close grooving and deeply excavated trench behind the varices; it is moreover distinguished by its light purple tinge of colouring and by the oblique disposition of the spots.

Species 24. (Mus. Cuming.)

CASSIS AREOLA. *Cass. testā ovatā, spirā acuminatā, apice acutā; anfractibus univaricosis, supernè concaviusculis, infrā gibbosis, lævibus, nitidis, apicem versus decussatis; columellā plicatā et interruptè rugatā, labro acutè dentato-lirato, medio tumidiusculo; cæruleo-albicante, maculis grandibus quadratis fulvescente-fuscis quinque-fasciatā.*

THE DRAUGHT-BOARD HELMET. Shell ovate, spire acu-

minated, sharp at the apex; whorls one-varicose, rather concave round the upper part, gibbous beneath, smooth, shining, decussated towards the apex; columella painted and interruptedly wrinkled, lip sharply dentately ridged, rather swollen in the middle; bluish white, encircled by five bands of large square fulvous-brown spots.

LAMARCK, *Anim. sans vert.* (Deshayes' edit.) vol. x. pl. 27.

Buccinum areola, Linnæus.

Cassidea areola, Bruguière.

Bezoardica areola, Schumacher.

Hab. Island of Negros, Philippines (on mud banks); Cuming.

The tessellated painting of this well-known species is so peculiar, that little need be added to the characters above detailed. In form it is mainly distinguished by its elevated gibbous growth.



25. b.



25. a.



25. c.



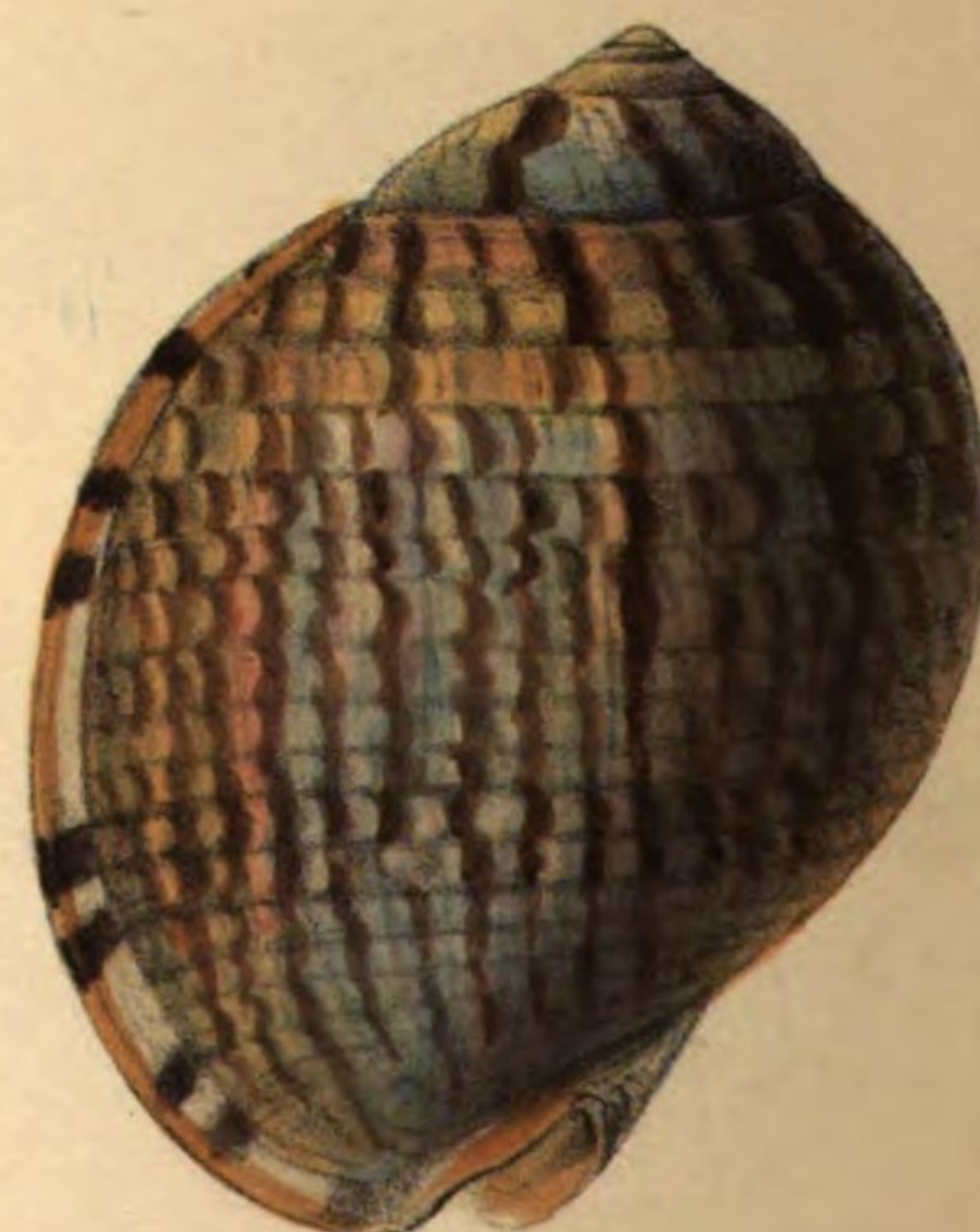
26.



27.



28. b.



28. a.

CASSIS.

PLATE X.

Species 25. (Fig. a. Mus. Cuming.
Fig. b. Mus. Saul.)

CASSIS TURGIDA. *Cass. testā ovatā, tenuiculā, ventricosā, spirā subacuminatā, anfractibus evaricosis, lævibus, turgidis, supernè rotundatis; columellā valdè contortā, basi uniplicatā, labro undique dentato-spinoso; lacteā, pallidè castaneo longitudinaliter flammātā, labro intensè castaneo maculato.*

THE SWOLLEN HELMET. Shell ovate, rather thin, ventricose, spire somewhat acuminate, whorls destitute of varices, smooth, swollen, rounded at the upper part; columella much twisted, one-plaited at the base, lip dentately spinous throughout; cream-coloured, longitudinally flamed with pale chesnut, lip spotted with very dark chesnut.

Hab. Boljoon, Island of Zebu, Philippines (on sand banks); Cuming.

A fine species belonging to the same group as *C. achatina*, *vibex*, and *torquata*; the whorls are distinguished for their swollen rotundity, and the columella is remarkably twisted. The lip is dentately spinous throughout. I have not seen any noded variety of this species.

Species 26. (Mus. Cuming.)

CASSIS UNDATA. *Cass. testā ovatā, gibbosiusculā, spirā acuminatā, apice acutā; anfractibus univaricosis, lævibus, basi conspicuè sulcatis, supernè depressiusculis et striatis, apicem versus granuloso-decussatis; columellā plicatā et interruptè rugatā, medio tuberculatā, labro fortissimè dentato-lirato, liris elongatis; cæruleo-albicante, fulvescente-fusco longitudinaliter striatā.*

THE WAVED HELMET. Shell ovate, rather gibbous, spire acuminate, sharp at the apex; whorls one-varicose, smooth, conspicuously grooved at the base, a little depressed and striated round the upper part, granulously decussated towards the apex; columella plicated and interruptedly wrinkled, tuberculated in the middle, lip very strongly dentately ridged, ridges elongated; bluish-white, longitudinally streaked with fulvous brown.

DESHAYES, Anim. sans vert. vol. x. p. 28, note.

Cassis lævis undata, Martini.

Buccinum strigatum, Gmelin.

Cassidea areola, var., Bruguière.

Cassis zebra, Lamarck.

Hab. Philippine Islands; Cuming.

Although the patterns of this species and the *C. areola* are united in the *C. decussata*, they are not varieties of the same as assumed by Bruguière and Kiener. The *C. areola* is a narrower and more gibbous shell than the *C. undata*, which is eminently distinguished from the former by the strong linear grooves around the base. The dentate ridges on the outer lip are longer and more strongly developed.

Species 27. (Mus. Cuming.)

CASSIS PPLICATA. *Cass. testā subelongato-ovatā, peculiariter compressā, spirā subacuminatā, apice acutā; anfractibus univaricosis, transversim subtilissimè lineari-sulcatis, supernè concavo-declivibus, margine noduloso-crenatis, infra subtiliter bi-seriatim gemmatis, ad angulum conspicuè muricato-nodosus, nodis in plicis prominulis subarcuatis descendentibus; columellā latè expansā, plicato-rugatis, rugis brevibus, labro acutè dentato-liratis, basi obsoletè trispinoso; livido-albicante, fulvescente longitudinaliter undulatè strigatā, varicibus fusco-maculatis, columellā labroque albis, aperturæ fauce fulvo-castaneā.*

THE PPLICATED HELMET. Shell somewhat elongately ovate, peculiarly compressed, spire somewhat acuminate, sharp at the apex; whorls one-varicose, transversely finely linearly grooved, concavely slanting at the upper part, nodulously crenated at the margin, encircled by two finely beaded ridges beneath, conspicuously prickly noded at the angle, nodules descending in prominent slightly curved plaits; columella widely expanded, plicately wrinkled, wrinkles short, lip sharply dentately ridged, obsoletely three-spinose at the base; livid-white, longitudinally undulately streaked with pale fulvous-colour, varices spotted with brown, lip and columella whitish, interior of the aperture fulvous chesnut.

DESHAYES, Anim. sans vert. vol. x. p. 26, note.

Buccinum plicatum, Linnæus.

Buccinum fimbria, Gmelin.

Cassis plicaria, Lamarck.

Hab. Moluccas.

We are indebted to M. Deshayes for having identified Lamarck's *Cassis plicaria* with the *Buccinum plicatum* of

Linnæus; care must, however, be taken not to confound it with the *Cassis plicata* of Martini, which is the *C. crumena* of Lamarck, and without doubt a variety of *C. testiculus*. The plicated sculpture of this species is constant, so also is its singularly compressed growth, and dark brown blotches behind the varices.

Species 28. (Fig. a. Mus. Saul.

Fig. b. Mus. Cuming.)

CASSIS ACHATINA. *Cass. testâ ovatâ, ventricosâ, spirâ brevi, anfractibus evaricosis, lævibus, columellâ vix rugatâ, basi truncatâ, labro tenuè reflexo, basin versus leviter denticulato; cinereâ aut cærulescente, rufo purpureove longitudinaliter flammâtâ et arcuatim articulatâ; columellâ lacteâ aut rufescente, labro fusconigricante maculato.*

THE AGATE HELMET. Shell ovate, ventricose, spire short, whorls destitute of varices, smooth, columella scarcely wrinkled, truncated at the base, lip thinly reflected, slightly denticulated towards the base; ash or bluish colour, longitudinally flamed and arcuately articulated with red or purple-brown; columella cream-colour or reddish, lip spotted with brownish-black.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 33.
Hab. Algoa Bay; Hennah.

A well-known species, not of very common occurrence, mainly distinguished by its richly variegated style of painting. Lamarck cites New Holland as its place of habitation, but Mr. Cuming's specimens were collected in Algoa Bay, Cape of Good Hope, by the Rev. Mr. Hennah.



29. a.



29. b.



29. c.



30.

CASSIS.

PLATE XI.

Species 29. (Mus. Cuming.)

CASSIS PYRUM. *Cass. testā ovato-globosā, plerumque crassissimā, anfractibus convexis, lævigatis, supernè plus minusve angulatis, interdum subnodosis; columellā crassā, lævigatā, basi obscurè sulcatā, labro reflexo, incrassato; aurantio-lacteā, nigricante-fusco pone varices maculatā.*

THE PEAR HELMET. Shell ovately globose, generally very thick, whorls convex, smooth, more or less angulated round the upper part, sometimes slightly nodose; columella thickened, smooth, obscurely grooved at the base, lip reflected, thickened; orange cream-colour, spotted with blackish-brown behind the varices.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 33.

Eadem. *Cassis Zeylanica*, Lamarck.

Hab. New Holland.

I cannot observe any character of sufficient permanence to distinguish Lamarck's *Zeylanica* from *C. pyrum*. The species is sometimes comparatively thin and lightly noded, but more frequently very much thickened, with the enamel sometimes deposited in rude callous layers.

Species 30. (Mus. Cuming.)

CASSIS SULCOSA. *Cass. testā ovatā, spirā subproductā, acutā, anfractibus evaricosis, supernè concavo-depressis, sulcis regularibus equidistantibus undique cingulatis; columellā plicato-rugatā et granosā, labro sæpissimè valdè incrassato, intus acutè fortiter lirato; griseo-fulvā, ferrugineo-fusco maculatā et flammātā.*

THE GROOVED HELMET. Shell ovate, spire somewhat produced, sharp, whorls destitute of varices, concavely depressed round the upper part, encircled throughout with regular, equidistant grooves; columella plicately wrinkled and granose, lip frequently very much thickened, sharply and strongly ridged within; greyish fulvous colour, blotched and flamed with rusty brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 34.

Buccinum sulcosum, Born.

Cassidea sulcosa, Bruguière.

Buccinum undulatum, Gmelin.

Hab. Mediterranean.

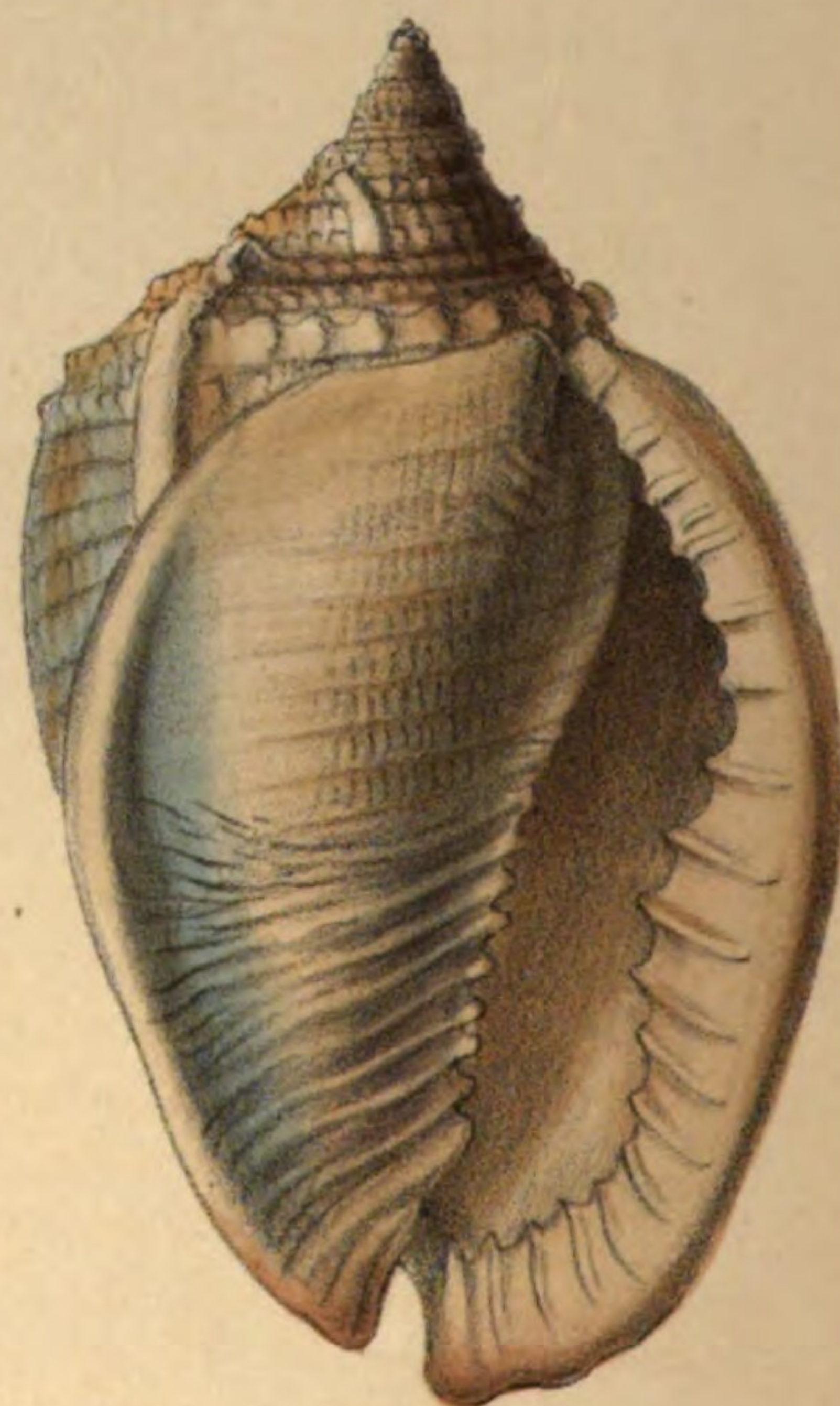
The common species of the Mediterranean, perfectly distinct from the *C. inflata* and others with which M. Kiener seems to confound it. Owing to its ventricose growth and the regularity with which it is spirally grooved throughout, it has somewhat the aspect of a *Dolium*.



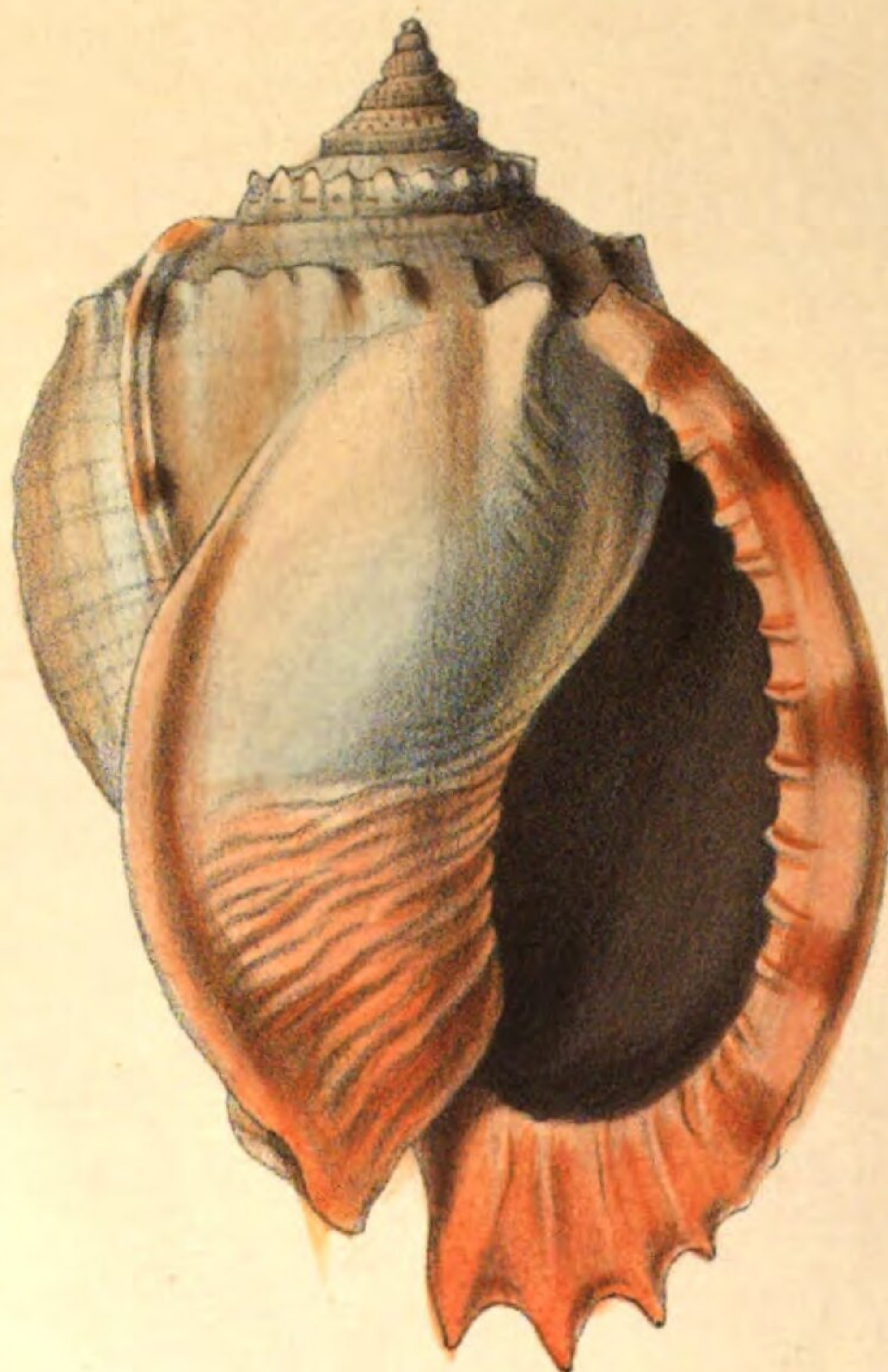
31.



32 a.



32. b.



33.

CASSIS.

PLATE XII.

Species 31. (Mus. Cuming.)

CASSIS CORONULATA. *Cass. testā suboblongo-ovatā, spirā subacuminatā, apice acutā; anfractibus lævigatis, nitidis, apicem versus decussatis, supernè depresso-concavis, ad angulum tenuè muricato-nodosis, anfractu ultimo univaricoso; columellā expansā, undulatim plicato-rugatā, labro externo acutè dentato-lirato, basi obsolete tri-spinoso; livido-albicante, fasciis transversis quinque latiusculis pallidè fusciscentibus, fasciis pallidioribus longitudinalibus undatis decussatis, nitidè pictā, fasciis saturatioribus pone varices, labro citrino-fulvescente tessellato.*

THE CORONATED HELMET. Shell somewhat oblong-ovate, spire somewhat acuminate, sharp at the apex; whorls smooth, shining, decussated towards the apex, depressly concave round the upper part, finely prickly noded at the angle, last whorl one-varicose; columella expanded, undulately plicately wrinkled, outer lip sharply dentately ridged, obsolete tri-spinose at the base; livid white, neatly painted with five rather broad transverse pale fulvous bands, decussated with paler longitudinal waved bands, bands darker behind the varices, lip tessellated with citron fulvous brown.

SOWERBY, Tankerville Catalogue, App. p. xx.

Hab. Philippine Islands; Cuming.

This is certainly not the young of *Cassis glauca*, as stated by M. Kiener; whether it should be regarded as a variety of that species may remain a matter of opinion, but I believe it to be distinct. Though not of very common occurrence it is not rare, and there appears to be no nearer approximation between the species than is represented by the accompanying figures. The *C. coronulata* is of a more oblong-oval form and perfectly smooth, without the least indication of those curious flattened indentations which characterize the *C. glauca*; the tessellated painting is peculiar and constant, and the spinous processes at the base of the lip are but three in number and very obscure.

Species 32. (Mus. Cuming.)

CASSIS EXARATA. *Cass. testā ovatā, spirā subacuminatā, apice acutā; anfractibus univaricosis, lævibus, transversim regulariter acutè sulcatis, supernè declivibus, spiraliter costatis, costis creberrimè nodoso-gemmatibus; columellā latè concavo-expansā, profusè et subtiliter*

plicato-rugatā, labro externo fortiter dentato-lirato; eburneā, maculis quadratis distantibus pallidè fulvescentibus tessellatā.

THE PLOUGHED HELMET. Shell ovate, spire somewhat acuminate, sharp at the apex, whorls one-varicose, smooth, transversely regularly sharply grooved, slanting at the upper part, spirally ribbed, ribs very closely beaded; columella broadly concavely expanded, profusely and very finely plicately wrinkled, outer lip strongly dentately ridged; ivory white, tessellated with distant pale fulvous square spots.

Hab. — ?

A new and very distinct species allied in form to the *C. glauca* and *coronulata*. Its chief peculiarities consist in the surface being encircled with narrow equi-distant grooves, and in the spire being strongly beaded. The columella is very widely expanded, and profusely sculptured with fine divaricating wrinkles.

Species 33. (Mus. Hudson.)

CASSIS GLAUCA. *Cass. testā ovatā, turgidā, spirā subacuminatā, apice acutā; anfractibus lævigatis, undique peculiariter indentatis, basi superficialiter sulcatis, supernè angulatis, ad angulum acutè muricato-nodosis, apicem versus decussatis, anfractu ultimo univaricoso; columellā expansā, exiliter plicato-rugatā, labro externo dentato-lirato, basi quadrispinoso; livido-glaucā, indistinctè fasciatā, labris vividè fulvescente-citrinis, apertura fauce purpureo-castaneā.*

THE GLAUCOUS HELMET. Shell ovate, swollen, spire somewhat acuminate, sharp at the apex, whorls smooth, everywhere peculiarly indented, superficially grooved at the base, angulated round the upper part, sharply prickly noded at the angle, decussated towards the apex, last whorl one-varicose; columella expanded, faintly plicately wrinkled, outer lip dentately ridged, four-spined at the base; livid glaucous colour, indistinctly banded, lips bright fulvous citron colour, interior of the aperture purple-chesnut.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 24.

Buccinum glaucum, Linnæus.

Cassidea glauca, Bruguière.

Bezoardica vulgaris, Schumacher.

Hab. Philippine Islands; Cuming.

A species of common occurrence, exhibiting little variation of colour or sculpture.

CASSIS.

	Plate.	Species.		Plate.	Species
<i>abbreviata</i> , Lamarck	VIII.	18	<i>paucirugis</i> , Menke	VIII.	19
<i>achatina</i> , Lamarck	X.	28	<i>pennata</i> , Lamarck	VIII.	20
<i>areola</i> , (Bucc.) Linn.	IX.	24	<i>pila</i> , Reeve	IX.	21
<i>bisulcata</i> , Schubert & Wagner .	III.	6	<i>plicaria</i> , Lamarck	X.	27
<i>canaliculata</i> , (Cassidea) Brug...	III.	8	<i>plicata</i> , (Bucc.) Linn.	X.	27
<i>coarctata</i> , Gray	VI.	14	<i>plicata</i> , Martini	IV.	10
<i>cornuta</i> , (Bucc.) Linn.	I.	2	<i>pomum</i> , Schubert & Wagner...	V.	11
<i>coronulata</i> , Sowerby	XII.	31	<i>pyrum</i> , Lamarck	XI.	29
<i>crumena</i> , Lamarck	IV.	10	<i>recurvirostrum</i> , (Bucc.) Wood .	VII.	16
<i>decussata</i> , (Bucc.) Linn.	II.	4	<i>rufa</i> , (Bucc.) Linn.	VIII.	20
<i>erinaceus</i> , Lamarck	VII.	15	<i>Saburon</i> , Adanson	V.	11
<i>exarata</i> , Reeve	XII.	32	<i>semigranosa</i> , Lamarck	I.	3
<i>fasciata</i> , Lamarck	IV.	9	<i>spinosa</i> , (Bucc.) Gronov.....	IV.	9
<i>fimbriata</i> , Quoy & Gaimard ...	VII.	17	<i>sulcosa</i> , (Bucc.) Born.....	XI.	30
<i>flammea</i> , (Bucc.) Linn.	V.	12	<i>tenuis</i> , Gray	VI.	13
<i>glauca</i> , (Bucc.) Linn.	XII.	33	<i>testiculus</i> , (Bucc.) Linn.	IV.	10
<i>granulosa</i> , Lamarck	IX.	22	<i>torquata</i> , Reeve	I.	1
<i>inflata</i> , (Bucc.) Shaw	IX.	22	<i>tuberosa</i> , (Cassidea) Brug.....	III.	7
<i>Japonica</i> , Reeve	IX.	23	<i>turgida</i> , Reeve	X.	25
<i>labiata</i> , Chemnitz	I.	2	<i>undata</i> , Deshayes	X.	26
<i>lactea</i> , Kiener	VIII.	18	<i>vibex</i> , (Bucc.) Linn.	VII.	15
<i>Madagascariensis</i> , Lamarck ...	II.	5	<i>zebra</i> , Lamarck	X.	26
<i>Massenæ</i> , Kiener	VI.	13	<i>Zeylanica</i> , Lamarck	XI.	29

CASSID.

19	VIII		19	VIII	
20	VIII		20	X	
21	X		21	X	
22	X		22	X	
23	X		23	X	
24	X		24	X	
25	X		25	X	
26	X		26	X	
27	X		27	X	
28	X		28	X	
29	X		29	X	
30	X		30	X	
31	X		31	X	
32	X		32	X	
33	X		33	X	
34	X		34	X	
35	X		35	X	
36	X		36	X	
37	X		37	X	
38	X		38	X	
39	X		39	X	
40	X		40	X	
41	X		41	X	
42	X		42	X	
43	X		43	X	
44	X		44	X	
45	X		45	X	
46	X		46	X	
47	X		47	X	
48	X		48	X	
49	X		49	X	
50	X		50	X	
51	X		51	X	
52	X		52	X	
53	X		53	X	
54	X		54	X	
55	X		55	X	
56	X		56	X	
57	X		57	X	
58	X		58	X	
59	X		59	X	
60	X		60	X	

MONOGRAPH
OF THE GENUS
TURRITELLA.

He compelled
The Proteus shape of Nature, as it slept,
To wake, and lead him to the caves that held
The treasures of the secrets of its reign.—*Shelley.*

MONOGRAPH

OF THE GENUS

TURBITELLA.

The contents of this monograph are as follows:
The genus Turbitella, and its relation to the genus Turritella.
The contents of the monograph are as follows:



2.

G.B. Sowerby, del. et lith.



1.



4.



3.

Reeve, Benham & Reeve, imp.

TURRITELLA.

PLATE I.

Genus TURRITELLA. Lamarck.

Testa elongato-turrita, lanceolato-acuminata, nunquam umbilicata, anfractibus numerosis, sæpissimè transversim costatis vel striatis, nunquam longitudinaliter exsculptis, evaricosis, nunquam spinosis aut muricatis; aperturâ parviusculâ, plus minusve rotundatâ, marginibus disjunctis, labro sæpè medio sinuato.

Shell elongately turreted, lanceolately acuminate, never umbilicated, whorls numerous, mostly transversely ribbed or striated, never longitudinally sculptured, destitute of varices, never spined or prickly; aperture rather small, more or less rounded, margins disjoined, lip often sinuated in the middle.

The genus *Turritella* affords excellent characters for the distinction of species. Constructed upon the simple type of an enlarging tube, the shell is developed with geometrical symmetry in short convolutions, varying from fifteen to thirty in number, the same number in each species, forming a sharply acuminate screw. The whorls are sometimes flattened or a little concave, and being always contiguous there is no indication of any umbilicus. No varices or tubercles are formed, as in *Cerithium*, nor is there any periodical development of sculpture on the margin of the aperture. The ribs and striæ of *Turritella* range transversely, that is, spirally, never longitudinally, and are rarely granulated or noduled. The best characters for the discrimination of species reside in the first eight or ten whorls from the apex; beyond this point the sculpture varies slightly or becomes obsolete, as the shell approaches maturity. In colour the reverse of this condition is presented, the pattern becoming gradually darker and more defined towards the aperture.

The genus *Turritella* has been somewhat neglected by conchologists. Only eleven species were described by Lamarck, and a monograph lately published in Paris by M. Kiener includes less than half the number now before me from the cabinets of Mr. Cuming, Mr. Metcalfe, Mr. Hanley, Sir. Edward Belcher, the British Museum, and the Banksian Collection in the museum of the Linnæan Society; amounting to sixty-five all distinctly characterized in respect of form, sculpture, and painting.

The Linnæan species have not been correctly interpreted by Lamarck, Deshayes, or Kiener, for want of access to the original types of the 'Systema Naturæ' preserved in the museum of the Linnæan Society of London. The *Turbo acutangulus* of Linnæus proves to be a simple variety of the *T. duplicatus*, and not the shell assigned to it by M. Deshayes. The shell described as *Turbo variegatus* in the 'Systema Naturæ,' though differing materially in

general aspect from that which served for the description of the *Turbo imbricatus*, may, nevertheless, be traced to belong to the same species; and the *Turbo unguinus* of Linnæus proves to be identical with Lamarck's *Turritella fuscata*. The British species *Turbo terebra*, Linn. in 'Fauna Suecica' (not of Syst. Nat.) and Montagu, must be referred to the *T. cornea* of Lamarck.

The *Turritella brevis* of Lamarck (*Le Mesal* of Adanson) constitutes the type of a new genus, founded by Mr. Gray, under the name MESALIA, to which I venture to add the *Turritella lactea* of Möller, and a very characteristic species from the Cumingian collection. A genus has been also introduced by Mr. Gray, with equal judgment, under the name EGLISIA, founded on the *Turritella spirata* of the Tankerville Catalogue; and to this is added a species collected by Mr. Cuming at one of the Philippine Islands.

The *Turritellæ* have a wide range of habitation and dwell at a considerable depth as well as near the surface. The *T. cornea* has been recently dredged off the Shetland Islands by Mr. M'Andrew at a depth of many fathoms, beyond the influence of light and colourless. Only two comparatively small species besides this, extend so far from north of the equator as the Mediterranean. The greater number are from the Eastern Seas and the shores of Central America, and there are a few known from New Zealand, Australia, and Van Dieman's Land.

Species 1. (Mus. Cuming.)

TURRITELLA UNGULINA. *Turr. testâ acuminato-turritâ, anfractibus quindecim, convexis, lævibus, regulariter decem-striatis, interstitiis superficialiter sulcatis, aperturâ suboblongo-ovali; castaneo-rufâ, aperturam versus ustulato-nigrâ.*

THE NAIL-BRUISED TURRITELLA. Shell acuminate turreted, whorls fifteen in number, convex, smooth, regularly ten striated, interstices superficially grooved, aperture rather oblong-oval; chestnut-red, burnt black towards the aperture.

Turbo unguinus, Linnæus, Syst. Nat. (12th. edit.) p. 1240.

Turritella fuscata, Lamarck.

Hab. Senegal, Mouth of the Gambia, West Africa.

The original specimen which served Linnæus for the type of his *Turbo unguinus*, still preserved in the museum of the Linnæan Society of London, proves, as Mr. Hanley first pointed out to me, to be Lamarck's *T. fuscata*. The locality "Seas of Europe" erroneously given in the 'Systema Naturæ' led Dr. Pulteney, and recently M. Deshayes, to assign the Linnæan species to the only *Turritella* existing north of the Mediterranean; on the

May, 1849.

authority of M. Kiener, however, who has the same access to the types of the Lamarckian species as we have to those of Linnæus, the European representative of the genus is the *T. cornea*, Lamarck. M. Deshayes' *T. unguina* (Anim. sans vert. vol. ix. p. 260) must therefore be cancelled.

Species 2. (Mus. Cuming.)

TURRITELLA DUPLICATA. *Turr. testâ obeso-turbinatâ, crassâ, ponderosâ, anfractibus ad sedecim, primis perpaucis multi-carinatis, carinâ unicâ, deinde duabus multo eminentioribus, carinis parvis cito evanidis, majoribus gradatim minus elatis, aperturâ valdè sinuatâ; fulvescente-lacteâ, anfractuum parte supremâ saturatiore.*

THE DUPLICATE TURRITELLA. Shell stoutly turbinated, thick, ponderous, whorls about sixteen in number, the first few many-keeled, one keel and afterwards two to three very conspicuously elevated, small keels quickly disappearing, larger keels gradually less raised, aperture considerably sinuated; fulvous cream-colour, uppermost part of the whorls of rather darker colour.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 251.

Turbo duplicatus, Linnæus.

Eadem var. *Turbo acutangulus*, Linnæus.

An eadem var.? *Turbo replicatus*, Linnæus.

Hab. Eastern Seas.

The *Turbo acutangulus* of Linnæus is truly a variety of his *Turbo duplicatus*, as may be seen on reference to the original specimen in the Linnæan collection; but not so the species to which M. Deshayes has assigned that title, figured by M. Kiener at Pl. 2. Fig. 26, and in the accompanying plate at Fig. 4.

The first few whorls of *Turritella duplicata* are encircled by numerous keels, one of which is particularly sharp and prominent. The smaller keels quickly disappear, and a second of equal prominence with the principal keel makes its appearance in most specimens at about the tenth whorl. Linnæus's *Turbo acutangulus* is a specimen in which the second prominent keel is not developed. The first sharp-angled keel is equally prominent in all varieties of the species during the first eight or ten whorls.

Species 3. (Mus. Cuming.)

TURRITELLA TEREBRA. *Turr. testâ lanceolato-turritâ, acutissimè attenuatâ, anfractibus ad quinque et viginti, medio tumidiusculis, spiraliter acutè sex-carinatis, suturis lævibus, excavatis; castaneo-brunneâ aut fulvescente.*

THE AUGUR TURRITELLA. Shell lanceolately turreted,

very sharply attenuated, whorls about twenty-five in number, rather swollen in the middle, spirally sharply six-keeled, sutures smooth, excavated; chestnut-brown or fulvous.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 253.

Turbo terebra, Linnæus, Syst. Nat. (not of Fauna Suecica.)

Turritella Archimedis, Dillwyn, Mawe.

Hab. Philippine Islands; Cuming.

The magnificent specimen here represented, is very similar to that selected by Martyn for the frontispiece of his 'Universal Conchologist.' Struck by the perfect symmetry of its convolutions, he distinguished it by the title of 'Αφροδίτη, significant of its graceful form and marine origin, and truly the geometrical proportions of this species are the perfection of beauty. The specimen figured was dredged by Mr. Cuming in fine sand at low water at the Island of Negros, one of the Philippines. The *T. terebra* of the 'Fauna Suecica' and of British authors (*T. Linnei* and *ungulinus*, Deshayes, *T. communis*, Philippi) is the *T. cornea* of Lamarck.

Species 4. (Mus. Cuming.)

TURRITELLA ATTENUATA. *Turr. testâ acutissimè attenuatâ, anfractibus ad viginti, spiraliter striatis, ulterioribus medio acutè et tenuè unicarinatis striis evanidis, suturis subexcavatis; fuscescente-albâ, lividâ, anfractuum parte superiori saturatiore, aperturâ sinuatâ.*

THE ATTENUATED TURRITELLA. Shell very sharply attenuated, whorls about twenty in number, spirally striated, latter whorls sharply and finely one-keeled in the middle, striæ disappearing, sutures rather excavated; light fulvous white, livid, upper part of the whorls darker, aperture sinuated.

Turritella acutangula, Deshayes, Anim. sans vert. vol. ix. p. 259 (not *Turbo acutangulus*, Linn.).

Hab. — ?

The "*carinâ majore acutâ*" by which Linnæus characterizes his *Turbo acutangulus*, constitutes a very prominent feature in that and the *T. duplicatus*, and proves them, beyond doubt, to be one and the same species. In the species under consideration there is no indication of this character, the whorls being merely encircled from the apex with ten elevated striæ or fine ridges which become more numerous, fainter, and almost obsolete. The species is further distinguished by its more attenuated growth, and a central fine keel or cord which is not developed until after the tenth or twelfth whorl, and the keel-like striæ become obsolete.



6 a.



5.



6 b.



7.

TURRITELLA.

PLATE II.

Species 5. (Mus. Cuming.)

TURRITELLA LEUCOSTOMA. *Turr. testā subpyramidalis, acuminatā, angustā, acutissimè lanceolatā, solidiusculā, anfractibus ad viginti, supernè contractis, suturis excavatis, infernè extrorsum projectis, planulatis, spiraliter sex-liratis, liris angustis, subdistantibus, interstitiis subtilissimè striatis; fulvescente-albā, liris nitidè aurantio-rufo articulatis.*

THE WHITE-MOUTH TURRITELLA. Shell somewhat pyramidally acuminate, narrow, very sharply lanceolate, rather solid, whorls about twenty in number, contracted round the upper part, sutures excavated, projected outwardly round the lower part, flattened, spirally six-ridged, ridges narrow, rather distant, interstices very finely striated; fulvous white, ridges neatly articulated with orange-brown.

VALENCIENNES, Zool. Voy. Humboldt et Bonpland, vol. ii. p. 275.

Hab. Gulf of Nicoiyo (in sandy mud at the depth of eleven fathoms); Cuming.

Distinguished by the truly regular style in which the shell is turreted. The whorls contracted round the upper part and projecting outwards gradually towards the base, look like an attenuated pyramid of thimbles; and they are spirally encircled throughout by a row of neatly articulated ridges.

Species 6. (Fig. a and b, Mus. Cuming.)

TURRITELLA BRODERIPIANA. *Turr. testā elongato-turritā, subcylindraco-tumidā, anfractibus octodecim, undique creberrimè impresso-striatis, perpaucis primis unicarinatis, medianis planulatis, cæteris medio depresso-concavis, suturis interdum indistinctis; fulvescente, cæruleo-fuscescente nebulatā, lineis rubido-fuscis transversis brevibus interruptis, in strigis undulatis frequenter dispositis, densè lentiginosā.*

BRODERIP'S TURRITELLA. Shell elongately turreted, somewhat cylindrically swollen, whorls eighteen in

number, very closely impressly striated throughout, the first few whorls one-keeled, the next flattened, then depressly concave in the middle, sutures sometimes indistinct; light fulvous colour, clouded with blue-brown and thickly freckled with short interrupted red-brown transverse lines, mostly disposed in waved streaks.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 388.

Turritella marmorata, Kiener.

Hab. Payta, Peru (in fine sand at a depth of about eight fathoms); Cuming.

The *T. Broderipiana* has a very characteristic style of painting, consisting of a profusion of short irregular linear dashes, ranged transversely, but mostly disposed in confused longitudinally waved streaks; and over these, there is generally a scorched blue-brown stain of colouring. The shell is of an uncouth subcylindrical growth, spirally encircled throughout with fine grooved striæ.

Species 7. (Mus. Cuming.)

TURRITELLA BACILLUM. *Turr. testā elongato-acuminatā, anfractibus octodecim ad viginti, convexis, supernè subplanulatis, spiraliter quinque- vel sex-carinatis, carinis angustis, subirregulariter distantibus, aperturam versus ferè evanidis; livido-fulvescente, carinis saturatioribus.*

THE STAFF TURRITELLA. Shell elongately acuminate, whorls eighteen to twenty in number, convex, rather flattened round the upper part, spirally five- to six-keeled, keels narrow, somewhat irregularly distant, almost disappearing towards the aperture; livid fulvous colour, the keels being of darker hue.

KIENER, Icon. coq. viv., p. 5. pl. 4. f. 1.

Hab. Ceylon.

The spiral keels of this species are not developed in the sharp prominent style of the *T. terebra*. Towards the aperture they nearly disappear, leaving their colour on the surface as though they had sunk, so to speak, into the substance of the shell.

TURBIDITY

1871

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Species 1. (Blue Canyon)

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Species 2. (Blue Canyon)

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Species 3. (Blue Canyon)

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10. b



10. a.

TURRITELLA.

PLATE III.

Species 8. (Mus. Cuming.)

TURRITELLA TIGRINA. *Turr. testā pyramidalī-turritā, subangustā, solidiusculā, anfractibus octodecim ad viginti, spiraliter quinque-vel sex-liratis, costā tumidā declivi ad basin angulatis; albidā, flammis obliquis purpureo-nigris profusè pictā.*

THE TIGER-STRIPED TURRITELLA. Shell pyramidally turreted, somewhat narrow, rather solid, whorls eighteen to twenty in number, spirally five- or six-ridged, angled at the base with a slanting swollen rib; whitish, profusely painted with oblique purple-black flames.

KIENER, Icon. coq. viv., p. 29. pl. 4. f. 2.

Hab. Gulf of California.

The peculiarities of this species, which approaches the *T. lentiginosa* and *goniostoma*, consist in its more solid structure and narrow pyramidal growth, whilst the whorls are swollen to an obtuse angle round the base. The colouring is disposed in more definite stripes, especially towards the apex. In the species just mentioned the first few whorls are conspicuously keeled round the middle, but in the *T. tigrina* there is little variation from the general pattern.

Species 9. (Mus. Cuming.)

TURRITELLA LENTIGINOSA. *Turr. testā subobeso-turritā, anfractibus ad viginti, primis perpaucis carinatis, medianis planulatis, cæteris medio convexis, basi tumidis, omnibus creberrimè spiraliter striatis et sulcatis, aperturam versus laminis irregularibus imbricatis; albidā, lineis subtilibus fuscis, brevibus, interruptis, spiraliter lentiginosā, maculis strigisve nigricantibus subindistinctis obliquè nebulatā, apice interdum violaceo.*

THE FRECKLED TURRITELLA. Shell rather stoutly turreted, whorls about twenty in number, the first few carinated, the middle whorls rather flattened, the rest convex in the middle and swollen round the base, the whole very finely spirally grooved and striated, and imbricated with irregular laminæ towards the aperture; whitish, spirally freckled with short interrupted fine brown lines, and obliquely clouded with rather indistinct blackish streaks and blotches, apex sometimes tinged with violet.

Hab. Payta, Peru (in coarse sand at a depth of about five fathoms); Cuming.

A shell of rather stout growth, generally more or less imbricated with rude irregular laminæ near the outer lip. The first seven or eight whorls are distinctly keeled round the middle, the next seven or eight are flattened in a manner almost to obliterate the suture, and the remainder are sunk in the middle and swollen above and below, showing the sutures more distinctly.

The painting of this species consists of a profusion of extremely fine, short, brown, transverse lines or dashes, over which is an obscure confused marbling of oblique blackish blotches; in some specimens this is wanting and its place is supplied by a dull greyish tinting. The apex is frequently of a delicate violet colour. Care should be taken not to confound the *T. lentiginosa* with the following species which is characterized by a different style of painting and a slight difference of form.

Species 10. (Fig. a and b, Mus. Cuming.)

TURRITELLA GONIOSTOMA. *Turr. testā subcylindræo-acuminatā, anfractibus octodecim ad viginti, spiraliter tenuistriatis, primis perpaucis carinatis, medianis planulatis, cæteris medio concavis, costā interdum prominulā et crenatā, supra et infra angulatis, anfractu ultimo sæpè prope aperturam laminis subimbricatis; albā, griseo-vel rufescente-nigro densè marmoratā.*

THE ANGULAR-MOUTH TURRITELLA. Shell somewhat cylindrically acuminate, whorls eighteen to twenty in number, spirally finely striated, the first very few whorls keeled, the middle whorls smooth, the rest concave in the middle, angled above and below with a rib, which is sometimes prominent and crenated, last whorl often slightly imbricated near the aperture with laminæ; white, thickly marbled with grey or reddish-black.

VALENCIENNES, Zool. Voy. Humboldt et Bonpland, vol. ii. p. 275.

Hab. Payta, Peru; Salango, West Columbia; Guacomayo, Central America (in sandy mud at depths of from five to ten fathoms); Cuming.

The variation of sculpture in the several stages of the growth of this species is very similar to that of the pre-

ceding, save that the latter whorls are more sharply angled above and below. The ribs which impart this angular structure to the whorls just before the growth of the shell is matured, are much more strongly developed in some specimens than in others; they are nevertheless sharply defined, and never have the obtuse swollen appearance presented in the *T. lentiginosa*. The sutural

grooving of the middle whorls is nearly obliterated, as in that species, by their flattened and close contact. In colouring, the *T. goniostoma* is characterized by a very dense marbled or mottled pattern of grey-black, sometimes a little rusty; and exhibits no indication of the short transverse linear dashes which serve to distinguish the *T. lentiginosa*.



11. b.



11. a.



12. a.



12. b.



13.



15.



14.

TURRITELLA.

PLATE IV.

Species 11. (Fig. a, Mus. Belcher. Fig. b, Mus. Cuming.)

TURRITELLA NODULOSA. *Turr. testā acuminato-turritā, anfractibus quatuordecim ad quindecim, transversim fortiter impresso-striatis, obscure uni-bi-angulatis, ad angulos nodulosis, medio concavis; sordide griseo-albā, flammulis fuscis inter nodulos longitudinaliter tinctā.*

THE NODULOUS TURRITELLA. Shell acuminate turreted, whorls fourteen to fifteen in number, transversely strongly impressly striated, obscurely one-two-angled, nodulous at the angles, concave in the middle; dull greyish-white, longitudinally stained with brown flames between the nodules.

KING, Zool. Journ. vol. v. p. 347.

Turritella papillosa, Kiener.

Hab. Gulf of Dulce, Central America (found in sandy mud at the depth of six to ten fathoms); Cuming.

Distinguished by its nodulous structure, which is a character of rare occurrence in this genus.

Species 12. (Fig. a and b, Mus. Cuming.)

TURRITELLA CARINIFERA. *Turr. testā pyramidalis-turritā, basi tumidā et acutè angulatā, anfractibus quatuordecim ad quindecim, supernè declivibus, infernè acutè bicarinatis, undique spiraliter impresso-striatis, striis subtilissimè undulato-corrugatis; niveā aut pallide purpurascente-roseā.*

THE KEELED TURRITELLA. Shell pyramidally turreted, swollen and sharply angled at the base, whorls fourteen to fifteen in number, slanting round the upper part, sharply two-keeled round the lower, spirally impressly striated, striæ very finely undulately wrinkled; snowy white or pale purple-pink.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 258.

Hab. —?

This remarkable shell has been thought to belong to a *Vermetus*, but its growth is perfectly regular.

Species 13. (Mus. Cuming.)

TURRITELLA CUMINGII. *Turr. testā sub-lanceolato-pyramidalis, crassiusculā, anfractibus ad viginti, plano-declivibus, infernè tumidis et obtusè angulatis, spiraliter quinqueliratis, liris angustis, acutiusculis, regularibus; fuscescente-albā, strigis maculisque purpureo-fuscis undique oblique nebulatā.*

CUMING'S TURRITELLA. Shell rather lanceolately pyramidal, rather thick, whorls about twenty in number, flatly slanting, swollen and obtusely angled round the lower part, spirally five-ridged, ridges narrow, rather sharp, regular; brownish white, obliquely clouded throughout with purple-brown streaks and blotches.

Hab. Panama (in mud at depths from eleven to sixteen fathoms); Cuming. Conchagua; Belcher.

Several specimens of this fine species, which I have the pleasure to dedicate to Mr. Cuming, were dredged by him at Panama. It was also collected by Sir E. Belcher at Conchagua during the voyage of the Sulphur. Each whorl is swollen outwardly at the base so as to form an obtuse angle, and the five ridges which encircle them are continued without change throughout the spire.

Species 14. (Mus. Cuming.)

TURRITELLA COLUMNARIS. *Turr. testā acutissimè lanceolato-turritā, ad basin acutè angulatā, anfractibus ad triginta, primis bicarinatis, carinis approximatis, cæteris planulatis, decemliratis, liris obsoletè granulatis, suturis excavatis; griseo-albidā, strigis purpureo-spadiceis oblique undatis nebulatā, basi purpurascente tinctā.*

THE COLUMNAR TURRITELLA. Shell very sharply lanceolately turreted, sharply angled at the base, whorls about thirty in number, the first two-keeled, keels approximated, the rest rather flattened, ten-ridged, ridges obsoletely granulated, sutures excavated; greyish-white, clouded with purple-fawn obliquely waved streaks, base tinged with purple.

KIENER, Icon. coq. viv. p. 10. pl. 7. f. 1.

Hab. Ceylon.

This species has the largest number of whorls, and is the most elongated form of the genus.

Species 15. (Mus. Cuming.)

TURRITELLA BANKSII. *Turr. testā pyramidalis-turritā, crassā, ad basin tumidulā et obtusè angulatā, anfractibus quindecim, undique minutissimè granuloso-reticulatis, concavis, lirā medianā aliisque minoribus irregularibus cingulatis, margine inferiori rotundatis, suturis indistinctis, columellā peculiariter contorto-productā, aperturā subquadratā; cinereo-olivaceā, nigro alboque variegatā, liris nigro articulatis.*

TURRITELLA.—PLATE IV.

BANKS' TURRITELLA. Shell pyramidally turreted, thick, rather swollen and obtusely angled at the base, whorls fifteen in number, very minutely granulously reticulated throughout, concave, encircled with a middle ridge and other irregular smaller ones, rounded at the lower edge, sutures indistinct, columella peculiarly produced in a twisted manner, aperture somewhat square; ash-olive, mottled with black and white, ridges articulated with black.

GRAY, MSS. Brit. Mus.

Hab. Panama (dredged from sandy mud at the depth of ten fathoms); Cuming.

A solid pyramidal shell in which the whorls are convex in the middle, rounded at the lower edge, and encircled with neatly articulated ridges, one of which is central and prominent.



17.



16. a.



19.



18.



20.



16. b.



21.

TURRITELLA.

PLATE V.

Species 16. (Fig. *a* and *b*, Mus. Cuming.)

TURRITELLA BREVIALIS.

For description of this Lamarckian species see Genus MESALIA, Gray, immediately following the present.

For Sp. 16, see Pl. X.

Species 17. (Mus. Cuming.)

TURRITELLA TRISULCATA. *Turr. testâ acuminato-turritâ, anfractibus ad octodecim, transversim conspicuè tricostratis, costis distantibus, sulcis intermediis excavatis; albidâ, apicem versus violascente, flammulis perpaucis irregularibus aurantio-fuscis obliquè pictâ.*

THE THREE-GROOVED TURRITELLA. Shell acuminate turreted, whorls about eighteen in number, transversely conspicuously three-ribbed, ribs distant, intermediate grooves hollowed; whitish, tinged with violet towards the apex, obliquely painted with a very few irregular orange-brown flames.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 256. *Hab.* Red Sea; Kiener.

The only species which is prominently three-ribbed. The painting is well characterized by Lamarck in the words, "ses flammules sont éparées."

Species 18. (Mus. Cuming.)

TURRITELLA ANNULATA. *Turr. testâ lanceolato-turritâ, anfractibus viginti, spiraliter striatis, supernè declivibus, deinde concavis et bicarinatis, carinis aperturam versus distantioribus, evanescentioribus, et interdum duplicatis; fulvo-spadiceâ, longitudinaliter obscure albinebulatâ.*

THE RINGED TURRITELLA. Shell lanceolately turreted, whorls twenty in number, spirally striated, slanting round the upper part, then concave and two-keeled, keels becoming gradually more distant, towards the aperture, fainter, and sometimes duplicate; fulvous-bay, longitudinally obscurely clouded with white.

KIENER, Icon. coq. viv. p. 20. pl. 13. f. 1.

Hab. Mouth of the Gambia, West Africa.

In the first ten whorls of this species, according to the specimen before me, the whorls are prominently developed and contiguous; after this period of its growth they become

gradually fainter and more distant, separating at length into two faint ridges.

Species 19. (Mus. Cuming.)

TURRITELLA VARIEGATA. *Turr. testâ pyramidalit-turritâ, anfractibus quindecim ad sedecim, perpaucis primis supernè declivibus, infernè excavatis, cæteris plano-concavis, supra suturas tumidiusculis, striis confertis lirisque quatuor vel quinque subtilibus, distantibus, interdum obsolete granulosis, cingulatis; albidâ vel purpurascence-spadiceâ, rufo-fusco punctatâ et longitudinaliter variegatâ, liris interdum fusco alboque articulatis, aperturæ fauce purpurascente.*

THE VARIEGATED TURRITELLA. Shell pyramidally turreted, whorls fifteen to sixteen in number, the first few slanting round the upper part, excavated beneath, the rest flatly concave, rather swollen above the sutures, encircled with four or five distant sometimes obsolete granulated ridges; whitish or purple-tinged fawn, dotted and longitudinally variegated with red-brown, ridges sometimes articulated with brown and white, interior of the aperture purplish.

Turbo variegatus, Linn. Syst. Nat. (12th. edit.) p. 1240.

Turritella imbricata, Lamarck.

Var. elongata. *Turbo imbricatus*, Linnæus.

Hab. Island of Margarita, West Indies; Dr. Hornbeck.

The original type of the *Turbo variegatus* in the Linnæan collection is a shell of immature growth, but extremely well characterized and highly coloured. The shell which served for Linnæus's *Turbo imbricatus* is, on the contrary, in the worst possible condition, perfectly bleached, and only retaining a sufficient amount of sculpture to identify it with the elongated variety represented by Kiener at Pl. IX. fig. 2 *a*. A comparison of these shells with specimens in Mr. Cuming's collection and in the British Museum (for one of which illustrative of the elongated variety, see Pl. IX. fig. 19 *b*) has enabled me to determine their affinity with satisfaction; and the name *variegatus* should be used in preference to that adopted by Lamarck, from the fact of its being a more appropriate one, and that which was assigned by Linnæus to the species in its normal form and condition.

Species 20. (Mus. Cuming.)

TURRITELLA BICINGULATA. *Turr. testâ acuminato-turritâ, anfractibus octodecim, subtiliter striatis, supernè de-*

presso-excavatis, deinde bicostatis, costis prominentibus, tumidis, planiusculis, distantibus, interstitio excavato, suturis subprofundè excavatis; fulvo-albidâ, rufo-fusco profusè flammâtâ et variegatâ, areâ inter costas parum pictâ, basi et aperturæ fauce purpureo-roseis.

THE TWO-GIRDLED TURRITELLA. Shell acuminate turreted, whorls eighteen in number, finely striated, depressly excavated round the upper part, then two-ribbed, ribs prominent, swollen, rather flattened, distant, with the interstice excavated, sutures rather deeply excavated; fulvous white, profusely flamed and variegated with red-brown, area between the ribs but little painted, base and interior of the aperture purple-rose.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 256.

Turritella biangulata, De Blainville.

Hab. Porto Praya, Cape de Verd Islands.

This fine species from the Cape de Verd Islands is distinguished by a pair of conspicuous swollen keels and a bold profuse style of painting; the base and aperture are of a peculiar purplish-hue.

At Pl. VII. Sp. 33, is another species very similar to

this, collected by Capt. Sir E. Belcher during the Voyage of the Sulphur.

Species 21. (Mus. Cuming.)

TURRITELLA TORULOSA. *Turr. testâ acuminato-turritâ, crassiusculâ, anfractibus quindecim, rotundatis, striatis, primis bicostatis, cæteris gradatim quadricostatis, costis obsoletè granatis, duabus inferioribus fortioribus; fulvescente-albâ, rufo-fusco punctatâ et eximie flammulatâ.*

THE CORDED TURRITELLA. Shell acuminate turreted, rather thick, whorls fifteen in number, rounded, striated, first whorls two ribbed, the rest gradually four-ribbed, ribs obsoletely grained, the two lower ribs always the stronger; light fulvous white, dotted and delicately flamed with red-brown.

KIENER, Icon. coq. viv. p. 18. pl. 6. f. 3.

Hab. —?

The whorls are more than usually rounded in this species, and they are corded with four rather prominent ribs, the upper two of which are not developed until the shell has advanced to its ninth or tenth convolution. The painting has a peculiarly dotted character.



22.



23.



24.



25.



26.



27.



28.

TURRITELLA.

PLATE VI.

Species 22. (Mus. Walton.)

TURRITELLA EXOLETA. *Turr. testā acuminato-turritā, crassiusculā, ad basin obtusè angulatā, anfractibus sedecim ad septemdecim, supernè et infernè rudè costatis, medio concavis, inæqualiter excavatis, septis tenuibus lamelliformibus interdum longitudinaliter imbricatis, costā inferiori duplici, aperturæ margine medio sinuato; sordidè cereo-albā, rufo-aurantio obscurè flammata, costis maculatis.*

THE DECAYED TURRITELLA. Shell acuminate turreted, rather thick, obtusely angled at the base, whorls sixteen to seventeen in number, rudely ribbed above and below, concave in the middle, unevenly excavated, sometimes longitudinally imbricated with thin lamelliform septa, lower rib duplex, margin of the aperture sinuated in the middle; dull waxen white, obscurely flamed with orange-brown, ribs spotted with the same.

Turbo exoletus, Linnæus, Gmelin's edit. p. 3607.

Turbo torcularis, Born.

Hab. Martinique, Guinea; Kiener.

The chief peculiarity of this remarkable species consists in the whorls being rudely excavated, and imbricated across the hollow at frequent intervals with thin lamelliform septa. Specimens, however, are more commonly seen without the septa; not merely worn, but in which they apparently never existed.

The shell in the Linnæan collection, numbered to refer to the 'Systema,' is a worn *T. bicingulata*, and to that species the present has been assigned by Dillwyn. I believe, however, that Linnæus's description refers to the shell under consideration, and the figure of Bonani, to which he refers, goes far to support that opinion.

Species 23. (Mus. Cuming.)

TURRITELLA CINGULATA. *Turr. testā pyramidalis-turritā, crassā, subponderosā, anfractibus ad septemdecim, planulatis, spiraliter fortiter tricostratis, costis planatis, granoso-crenatis; ferrugineo-albidā, costis castaneo-nigris.*

THE GIRDLED TURRITELLA. Shell pyramidally turreted, thick, rather ponderous, whorls about seventeen in number, rather flattened, spirally strongly three-ribbed, ribs flattened and granosely crenated; rusty white, ribs chestnut-black.

SOWERBY, Tankerville Catalogue, App. p. xiii.

Turritella tricarinata, King.

Hab. Valparaiso (in coarse gravel at the depth of six fathoms); Cuming.

Mr. Cuming speaks of this very characteristic species as being very abundant at Valparaiso, having frequently brought up two bushels of living specimens at a time, mingled with coarse gravel.

Species 24. (Mus. Cuming.)

TURRITELLA FLAMMULATA. *Turr. testā acuminato-turritā, anfractibus octodecim, perpaucis primis bicostatis, cæteris rotundatis, septem-costatis, costis medianis latiusculis, cæteris utrinque gradatim angustioribus; fulvescente-albā, roseo tinctā, purpureo-fusco punctatā et marmoratā, basi roseā.*

THE FLAMED TURRITELLA. Shell acuminate turreted, whorls eighteen in number, the few first two-ribbed, the rest rounded, seven-ribbed, middle ribs rather broad, the remainder on either side gradually narrower; fulvous-white, stained with rose, dotted and marbled with purple-brown, base rose.

KIENER, Icon. coq. viv. p. 7. pl. 5. f. 1.

Le Ligar, Adanson.

Turritella Ligar, Deshayes.

Hab. Muscat, Red Sea.

The shell here represented from the above-mentioned locality is, no doubt, *Le Ligar* of Adanson, a name which cannot correctly be adopted in the Latin. It will be observed that both the sculpture and colouring of the species are peculiar.

Species 25. (Mus. Belcher.)

TURRITELLA CEREÆ. *Turr. testā elongato-turritā, crassiusculā, anfractibus octodecim ad viginti, supernè subdeclivibus, infernè tumidiusculis, spiraliter sexcarinatis, carinis angustis, acutis, aperturam versus evanidis; fulvescente-albā, anfractuum parte superiori fulvo-ru-fescente tinctā.*

THE WAXEN TURRITELLA. Shell elongately turreted, rather thick, whorls eighteen to twenty in number, somewhat inclined round the upper part, rather swollen round the lower, spirally six-keeled, keels narrow, sharp, fading towards the aperture; fulvous white, upper portion of the whorls tinged with fulvous-red.

Hab. — ?

May, 1849.

The characters by which this species differs from *T. bacillum* are apparently of trivial importance, but they are constant in several specimens that have come under my observation. The whorls are more swollen round the lower part, and the keels are finer, more numerous, and not distinguished by any darker colouring.

Species 26. (Mus. Cuming.)

TURRITELLA CROCEA. *Turr. testā pyramidalī-turritā, solidiusculā, anfractibus viginti aut pluribus, convexo-planulatis, spiraliter quinque- ad decem-carinatis, carinis subtilibus, inæquidistantibus; croceo-brunneā, anfractuum parte superiori saturatiore, suturis pallidioribus.*

THE SAFFRON-TINGED TURRITELLA. Shell pyramidally turreted, rather solid, whorls twenty or more in number, convexly flattened, spirally five to ten-keeled, keels fine, inequidistant; saffron-brown, upper part of the whorls darker, sutures paler.

KIENER, Icon. coq. viv. p. 24. pl. 11. f. 2.

Hab. China.

The flattened surface of the whorls and light colouring of the sutures constitute the characteristic features of this species. The spiral keels are unusually numerous, but the alternate ones are sometimes only faintly developed, leaving five only of a prominent character.

Species 27. (Mus. Belcher.)

TURRITELLA SANGUINEA. *Turr. testā subelongato-turritā, anfractibus octodecim ad viginti, convexis, spiraliter impresso-sulcatis, sulcis irregularibus, liris intermediis*

planiusculis; fulvo-albicante, liris maculis sanguineis transversis, oblongo-quadratis, profusè pictis.

THE BLOOD-STAINED TURRITELLA. Shell somewhat elongately turreted, whorls eighteen to twenty in number, convex, spirally impressly grooved, grooves irregular, intermediate ridges rather flattened; fulvous white, ridges profusely painted with transverse oblong-square blood-stained spots.

Hab. California.

A very characteristic species in which the entire surface is closely painted with transverse oblong-square dull blood-stained spots.

Species 28. (Mus. Cuming.)

TURRITELLA GEMMATA. *Turr. testā pyramidalī-turritā, crassiusculā, ad basin angulatā, anfractibus ad quindecim, supernè bicostatis, medio concavis, infernè unicastis, costis superioribus granatis, inferiori lævi; albā, rufescente-fusco hic illic pallidè tinctā.*

THE GEMMED TURRITELLA. Shell pyramidally turreted, rather thick, angled at the base, whorls about fifteen in number, encircled with two granulated ribs round the upper part, and one smooth one round the lower, concave in the middle; white, faintly stained here and there with light orange brown.

Hab. — ?

The structure of this species approaches somewhat in pattern to that of the *T. radula*, though it will be found to differ on comparison in the lower spiral rib being smooth except on the last whorl. The species differ materially in form, the *T. gemmata* being shorter and composed of much fewer whorls.



30.



29.



31.



32.



33.



35.



34.

TURRITELLA.

PLATE VII.

Species 29. (Mus. Cuming.)

TURRITELLA COCHLEA. *Turr. testā subulato-turritā, crassiusculā, anfractibus quindecim, spiraliter striatis, supernè depresso-excavatis, medio bicarinatis, carinis angustis, elevatis, acutis, distantibus, interstitio excavato, aperturā parvā; albidā.*

THE SCREW TURRITELLA. Shell subulately turreted, rather thick, whorls fifteen in number, spirally striated, depressly excavated round the upper part, two-keeled in the middle, keels narrow, elevated, sharp, distant, with the interstices between them excavated, aperture small; white.

Hab. — ?

The form of this species is remarkably characterized by its very prominent bicarinate structure, resembling the thread of a large flattened press-screw. The specimen here represented from Mr. Cuming's collection is the only one I have seen; and he possesses no information as to its locality. It exhibits no indication of colour.

Species 30. (Mus. Cuming.)

TURRITELLA RADULA. *Turr. testā lanceolato-acuminatā, gracili, anfractibus ad duobus et viginti, suprā infrāque biliratis, medio concavis, liris, nisi infimā, granoso-crenatis, anfractu ultimo lamellis septiformibus interdum imbricato, granulis subobsolete; violascente-albidā, rufo-fuscescente flammata et variegatā.*

THE GRATER TURRITELLA. Shell lanceolately acuminate, slender, whorls about two and twenty in number, double-ridged above and below, concave in the middle, ridges, excepting the lowest, granosely crenated, last whorl sometimes imbricated with septiform lamellæ, granules rather obsolete; violet-white, flamed and variegated with reddish-brown.

KIENER, Icon. coq. viv. p. 13. pl. 2. f. 1.

Hab. Isle of Muerte, Bay of Guayaquil (found at the depth of eleven fathoms in sandy mud); Cuming.

The form of the whorls of this elongated lanceolate species is very similar to that of *T. exoleta*; the middle is however less concave and the upper and lower ribs are represented each by two smaller ridges which are granosely crenulated.

Species 31. (Mus. Metcalfe.)

TURRITELLA HASTULA. *Turr. testā acutè lanceolatā, gracili, anfractibus duobus vel tribus et viginti, convexiusculis, concentricè plicato-corrugatis, ulterioribus planatis, basi tumidiusculis, rugis evanidis, anfractibus omnibus spiraliter inciso-striatis, liris intermediis obsolete granulatis; cinereo-albicante, purpureo-brunneo arcuatim strigatā et variegatā.*

THE LITTLE LANCE TURRITELLA. Shell sharply lanceolate, slender, whorls two or three and twenty in number, rather convex, concentrically plicately wrinkled, the latter flattened, rather swollen at the base, the wrinkles faded away, all the whorls spirally impressly striated, the intermediate ridges being obsoletely granulated; ash-white, arcuately streaked and variegated with purple-brown.

Hab. — ?

A very slender sharply lanceolate shell, fully distinguished by the peculiarities of sculpture above described from any other species of this monograph.

Species 32. (Mus. Cuming.)

TURRITELLA FERRUGINEA. *Turr. testā subelongato-turritā, ad basin angulatā et subcarinatā, anfractibus sedecim, convexis, spiraliter subtiliter liratis, primis bicarinatis, carinis gradatim evanidis, lirarum interstitiis striis minutis longitudinalibus sub lente creberrimè decussatis; albidā, basin versus ferrugineo-castaneo tinctā.*

THE RUSTY TURRITELLA. Shell somewhat elongately turreted, angulated and slightly keeled at the base, whorls sixteen in number, convex, spirally finely ridged, the first whorls two-keeled, keels gradually fading, interstices between the ridges very closely decussated beneath the lens with minute longitudinal striæ; whitish, stained towards the base with rusty chestnut.

Hab. — ?

The whorls of this species have a peculiar angular carinate structure at the base, in the place of the suture.

Species 33. (Mus. Belcher.)

TURRITELLA MACULATA. *Turr. testā acuminato-turritā, basi concavā et nitidè striatā, anfractibus octodecim spira-*

May, 1849.

liter acutè elevato-striatis, supernè excavatis, deinde bicostatis, costis tumidiusculis, interstitio concavo, anfractibus primis parum costatis; albidâ, aut fulvescente, striis spiralibus purpureo-fusco tinctis, anfractibus infra suturas purpureo-fusco maculatis et interdum lineatis, basi violaceâ.

THE SPOTTED TURRITELLA. Shell acuminate turreted, concave and neatly striated at the base, whorls eighteen in number, spirally sharply elevately striated, excavated round the upper part, then two-ribbed, ribs rather swollen, with the interstice concave, the first whorls but slightly ribbed; whitish or fulvous, spiral striæ stained with purple-brown, whorls spotted beneath the sutures and sometimes lineated with the same colour, base violet.

Hab. China Seas; Belcher.

Although this species approximates so closely to the *T. bicingulata* in general appearance, it will be found to differ on examination. In the earlier whorls of *T. bicingulata* the keels are very prominently developed even to the apex; in the species under consideration they are comparatively obsolete, the base of the shell is more concave, and is marked by numerous coloured linear striæ, which are continued throughout the shell. There is none of the bold blotchy painting which characterizes the *T. bicingulata*, but the upper margin of the whorls is always distinguished by a row of irregular red-brown spots immediately beneath the sutures.

Species 34. (Mus. Hanley.)

TURRITELLA META. *Turr. testâ pyramidal-conicâ, crassiusculâ, anfractibus quindecim, plano-declivibus, basi tumidiusculis, spiraliter crebristriatis, anfractuum dimidio superiori eximie subirregulariter lirato, liris sub-obsolete granosis; fulvescente-albâ, purpureo-rufo maculatâ et variegatâ, liris striisque purpureo-rufo alboque nitidè articulatis.*

THE CONICAL PILLAR TURRITELLA. Shell pyramidally conical, rather thick, whorls fifteen in number, flatly slanting, rather swollen at the base, spirally closely striated, upper half of the whorls delicately and somewhat irregularly ridged, ridges somewhat obsoletely granose; fulvous-white, blotched and variegated with purple-red, ridges and striæ neatly articulated with purple-red and white.

Hab. — ?

Unacquainted with the *T. nebulosa* of M. Kiener, I have been somewhat inclined to assign the present species to it, save that it is a stouter shell, the ridges appear on the upper half of the whorls only, and he makes no mention of their very delicate articulated painting.

Species 35. (Mus. Metcalfe.)

TURRITELLA CORNEA. *Turr. testâ acuminato-turritâ, interdum crassiusculâ, ad basin obtusè angulatâ, anfractibus quindecim, spiraliter tricarinatis et striatis, anfractibus ultimi, et interdum penultimi, carinis evanidioribus, lirâ parvâ in interstitiis; ferrugineo-castaneâ, aperturæ fauce purpureo tinctâ.*

THE HORNY TURRITELLA. Shell acuminate-turreted, sometimes rather thick, obtusely angled at the base, whorls fifteen in number, spirally three-keeled and striated, keels of the last whorl, and sometimes of the last but one, fainter, having a small ridge in the interstices; rusty-chestnut, interior of the aperture tinged with purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 255. *Turbo terebra*, Linnæus, (of Fauna Suecica, not of Syst. Nat.)

Turritella unguina, Deshayes, (not *Turbo unguinus*, Linn.)

Turritella Linnei, Deshayes.

Turritella communis, Risso.

Hab. Seas of Europe.

Described by Linnæus in his 'Fauna Suecica' under the name *T. terebra*, which has been adopted by Montagu and other British authors, without considering that the name had already been appropriated in the 'Systema Naturæ' to a foreign species of much larger dimensions. Lamarck described it under the name given above, but from a worn and very obscure specimen, and with so brief a description, and no information as to its locality, that until M. Kiener, who held the keys of Lamarck's collection, published the *T. cornea*, it was impossible correctly to identify the species. M. Deshayes not having obtained access either to Linnæus's collection for the type of *Turbo unguinus*, or to Lamarck's for that of *Turritella cornea*, assigned the species under consideration, agreeably with the views of Dr. Pulteney, to the former of these, which is Lamarck's *T. fuscata*; and did not observe it to be identical with the *T. terebra* of the 'Fauna Suecica,' which he proposes to call *T. Linnei*.

The figure to which Lamarck refers in the 'Encyclopédie Méthodique' in illustration of his *T. cornea*, is the Mediterranean form of the species, which is more elongated and has the sutures more excavated than that found on our own coast. The accompanying figure represents a specimen of the British state of the species dredged at Torbay by Mr. Metcalfe; and Mr. Hanley possesses a transparent white variety, with the keels more prominently developed, dredged off the Shetland Isles at a considerable depth by Mr. M'Andrew. Professor E. Forbes informs me, however, that this variety is not uncommon, and occurs in shallows as well as deeps.



37.



36.



38.



40



39. a.



41.



39. b.

TURRITELLA.

PLATE VIII.

Species 36. (Mus. Cuming.)

TURRITELLA HANLEYANA. *Turr. testâ acuminato-pyramidalî, ad basin angulatâ et plano-concavâ, anfractibus quatuordecim, plano-declivibus, spiraliter quadriliratis et striatis, basi marginatis; sordidè lacteâ, maculis nigricantibus indistinctis obliquè tinctâ.*

HANLEY'S TURRITELLA. Shell acuminate pyramidal, angulated and flatly concave at the base, whorls fourteen in number, flatly slanting, spirally four-ridged and striated, margined round the base; dull cream-colour, obliquely stained with indistinct blackish spots.

Hab. — ?

An extremely characteristic species both in respect of form and sculpture. Mr. Metcalfe also possesses a specimen.

Species 37. (Mus. Metcalfe.)

TURRITELLA CLATHRATA. *Turr. testâ lanceolato-acuminatâ, angustâ, solidiusculâ, anfractibus octodecim, planatis, lævibus, dimidio inferiori fortiter bicarinatis; fulvo-castaneâ, aurantio-fusco obscure maculatâ, carinis pallidioribus.*

THE CROSS-BARRED TURRITELLA. Shell lanceolately acuminate, narrow, rather solid, whorls eighteen in number, flattened, smooth, strongly two-keeled upon the lower half; fulvous chestnut, obscurely spotted with orange-brown, keels paler.

KIENER, *Icon. coq. viv.* p. 38. pl. 14. f. 1.

Hab. — ?

Distinguished by its very narrow acuminate growth, and smooth bold pair of keels.

Species 38. (Mus. Banks. Soc. Linn.)

TURRITELLA CANDIDA. *Turr. testâ acuminato-turritâ, anfractibus octodecim, spiraliter striatis, supernè bicarinatis; medio concavis, deinde unicarinatis, anfractu ultimo et penultimo quadricarinatis, suturis excavatis; niveâ, immaculatâ.*

THE WHITE TURRITELLA. Shell acuminately turreted, whorls eighteen in number, spirally striated, two-keeled round the upper part, concave in the middle, then encircled with a single keel, last whorl,

and last but one, four-keeled, sutures excavated; snowy white, unspotted.

Hab. — ?

A delicate semi-transparent white species of which I have seen two very characteristic specimens; one in Mr. Cuming's collection and the other in the Banksian cabinet of the Linnæan Society. Amongst the shells collected by Sir Joseph Banks, preserved in this Museum, are many interesting species.

Species 39. (Fig. a, Mus. Cuming. Fig. b, Mus. Walton.)

TURRITELLA PUNCTATA. *Turr. testâ subpyramidalî-acuminatâ, crassiusculâ, basi fortiter costatâ, anfractibus quindecim, spiraliter striatis, carinatis et concavis, infernè tumidis, carinis granatis; albidâ, purpureo-fusco profusè punctatâ, maculatâ, et variegatâ.*

THE DOTTED TURRITELLA. Shell somewhat pyramidally acuminate, rather thick, strongly ribbed at the base, whorls fifteen in number, spirally striated, keeled and concave, swollen round the lower part, keels grained; whitish, profusely dotted, blotched, and variegated with purple-brown.

KIENER, *Icon. coq. viv.*, p. 19. pl. xi. f. 3.

Hab. — ?

The keels are somewhat irregular in this species, but it is constantly distinguished by a slight swelling out of the base of each whorl. The upper part of the whorl is always more or less concave with a smaller keel or ridge in the concavity.

Species 40. (Mus. Cuming.)

TURRITELLA SPECTRUM. *Turr. testâ elongato-turritâ, tenuiculâ, anfractibus octodecim, rotundatis, primis sex-carinatis, deinde duodecim-carinatis, carinis exilibus, gradatim subtilioribus; semipellucido-albicante, anfractuum parte superiori fufescente tinctâ.*

THE SPECTRE TURRITELLA. Shell elongately turreted, rather thin, whorls eighteen in number, rounded, the first six-keeled, then twelve-keeled, keels delicate, gradually finer; semitransparent white, upper part of the whorls tinged with brown.

Hab. — ?

May, 1849.

The gradual doubling of the number of keels in this species is curious. The first ten whorls are encircled by six keels, an intermediate keel then gradually appears in each of the interstices, increasing in size until they obtain the same degree of development as the original keels.

Species 41. (Mus. Cuming.)

TURRITELLA ROSEA. *Turr. testâ pyramidal-conicâ, basi plano-angulatâ, anfractibus quindecim, planatis, spiraler quinq-ue-liratis, liris inæquidistantibus, striis elevatiusculis in interstitiis; albidâ, basin versus ferrugineo-fuscâ, liris striisque saturatioribus, aperturæ fauce livido-purpurascete tinctâ.*

THE ROSE TURRITELLA. Shell pyramidally conical, flatly angled at the base, whorls fifteen in number, flattened, spirally six-ridged, ridges inequidistant, with

rather elevated striæ in the interstices; whitish, rusty brown towards the base, lines and striæ darker brown, interior of the aperture tinged with livid purple.

QUOY and GAIMARD, Zool. Voy. de l'Astrolabe, vol. iii. p. 136. pl. 55. f. 24-26.

An eadem? *Turritella lineolata*, Kiener.

Hab. New Zealand.

The truly conical form of this species is very characteristic, and it is neatly encircled throughout with brown lines, consisting of ridges and intermediate striæ at unequal distances. I can discover little of the rose-colouring observed by M. Quoy; and I incline to suspect the rarity of this has led M. Kiener to describe the yellower and lighter variety of the species under another name, *T. lineolata*.



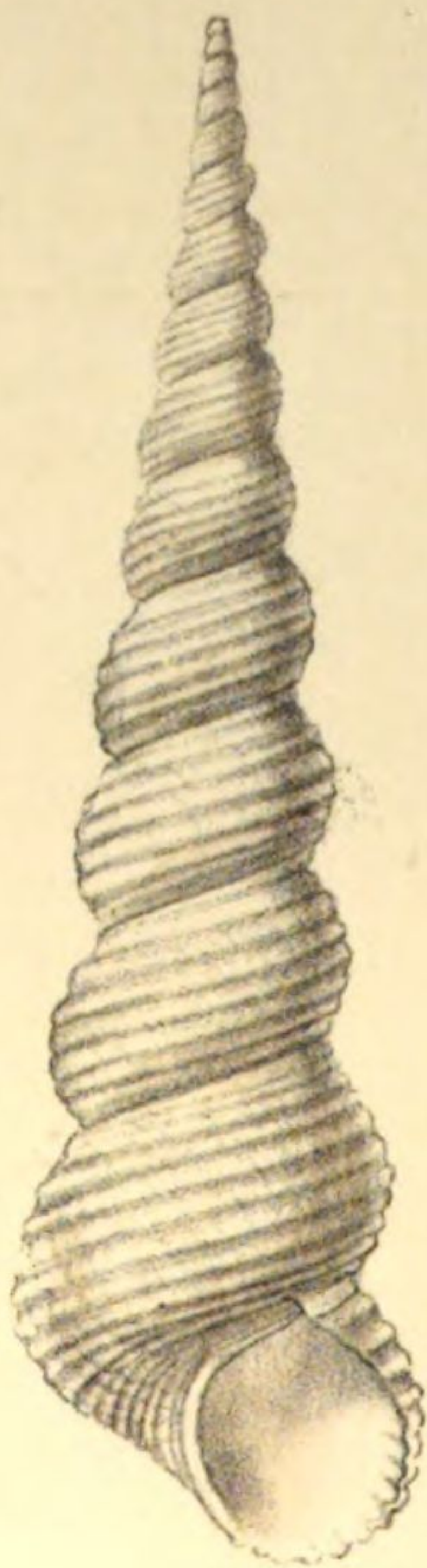
43. a.



42.



43. b.



44.



45.



49. b.



46.

TURRITELLA.

PLATE IX.

Species 42. (Mus. Brit.)

TURRITELLA TASMANICA. *Turr. testā angusto-acuminatā, solidiusculā, anfractibus quindecim, planiusculis, ad marginem inferiorem liratis, liris duabus striisque intermediis supra cingulatis, interstitiis striis minutis elevatis obliquis creberrimè decussatis; sordidè albā.*

THE TASMANIAN TURRITELLA. Shell narrowly acuminate, rather solid, whorls fifteen in number, rather flattened, ridged at the lower edge, encircled with two ridges and intermediate striæ above, interstices very closely decussated with minute oblique raised striæ; dead white.

Hab. Van Dieman's Land; Dr. Sinclair.

The only specimen of this, in the British Museum, is in bad condition and colourless, but affords strong characters for the foundation of the species. It approximates nearest to the *T. clathrata* in which the spiral ridges are more strongly and conspicuously developed, and the interstices smooth.

Species 43. (Fig. a and b, Mus. Cuming.)

TURRITELLA TRIPLICATA. *Turr. testā acuminato-turritā, crassiusculā, anfractibus quindecim, spiraliter striatis, et tricostatis, costis planulatis, medianā multo majore, superiori parvā, duplicatā, apicem versus interdum obsoletā; nunc albidā, castaneo variegatā et flammata, nunc castaneā, unicolore.*

THE THREE-PLAITED TURRITELLA. Shell acuminate, turreted, rather thick, whorls fifteen in number, spirally striated, and three-ribbed, ribs flattened, the middle rib much the largest, the upper one small, duplicate, and sometimes obsolete towards the apex; whitish, variegated and flamed with chestnut, sometimes entirely chestnut.

STUDER, Philippi, Enum. Moll. Sicil. p. 190.

Hab. Mediterranean and West Coast of Africa.

The specimens here figured of this species are from the mouth of the Gambia; in the Mediterranean it is of somewhat smaller dimensions and of lighter growth.

Species 44. (Mus. Brit.)

TURRITELLA NIVEA. *Turr. testā elongato-turritā, crassiusculā, anfractibus viginti, supernè contractis, deinde tumidiusculis, transversim septem-costatis, costis interstitiisque striatis, æqualibus, striis minutis incrementi creberrimè decussatis, anfractibus perpaucis primis bicarinatis, carinis cito evanidis; niveā.*

THE SNOW-WHITE TURRITELLA. Shell elongately turreted, rather thick, whorls twenty in number, contracted round the upper part, then rather swollen, transversely seven-ribbed, ribs and interstices striated, equal, very closely decussated with minute lines of increase, first few whorls two-keeled, keels quickly disappearing; snowy-white.

GRAY, MSS. British Museum.

Hab. East Coast of Africa; Capt. Owen, R.N.

A genuine snow-white species, rather closely encircled with neat ridges of equal width with the interstices.

Species 45. (Mus. Brit.)

TURRITELLA GUNNII. *Turr. testā elongato-acuminatā, solidiusculā, angustā, anfractibus octodecim, plano-concavis, marginibus tumidiusculis, medio obscurè et subirregulariter liratis et striatis, suturis excavatis; albidā, flammis undulatis pallidè fulvescente-fuscis obliquè pictā, basi pallidè roseā.*

GUNN'S TURRITELLA. Shell elongately acuminate, rather solid, narrow, whorls eighteen in number, flatly concave, margins rather swollen, obscurely and somewhat irregularly ridged and striated in the middle, sutures excavated; whitish, obliquely painted with light fulvous-brown waved flames, base pinkish.

Hab. Van Dieman's Land; Gunn.

An interesting new species collected by Mr. Ronald Gunn, an eminent naturalist of Hobart Town. It is a narrow, sharply acuminate shell, with the whorls flatly concave, and margined at the edges so as to give an excavated appearance to the sutures.

Species 46. (Mus. Belcher.)

TURRITELLA AQUILA. *Turr. testā pyramidalis-turritā, anfractibus quatuordecim aut quindecim, supernè concavo-declivibus, deinde subobscurè latè bicostatis, undique con-*

TURRITELLA.—PLATE IX.

spicue inciso-striatis, anfractu ultimo infra nitide lirato et striato; ustulato-fuscescente, rufo-castaneo oblique maculatâ vel strigatâ.

THE SWARTHY TURRITELLA. Shell pyramidally turreted, whorls fourteen to fifteen in number, concavely slanting round the upper part, then somewhat obscurely broadly two-ribbed, conspicuously engraved throughout with grooved striæ, last whorl neatly

ridged and striated beneath; swarthy brown, obliquely spotted and streaked with reddish chestnut.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. Nangasaki Bay, Japan.

The painting of this species has rather a dotted appearance from its being every where cut through by the striate grooves.



47.



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55.

TURRITELLA.

PLATE X.

Species 16. (Mus. Banks).

TURRITELLA CONSTRICTA. *Turr. testā turritā, suturis profundis, anfractibus duodecim ad quatuordecim, bicarinatis, carinis remotè distantibus, interstitio concavo; sordidè albā.*

THE TIED TURRITELLA. Shell turreted, sutures deep, whorls twelve to fourteen in number, two-keeled, keels widely distant, the interstice being concave; dead white.

Hab. — ?

Three specimens of this species, not hitherto described, are preserved in the Banksian collection of the Linnæan Society.

Species 47. (Mus. Hanley.)

TURRITELLA FASCIALIS. *Turr. testā lanceolato-acuminatā, gracillimā, anfractibus octodecim, convexis, exiliter quadriliratis, suturis subcontractis; lutescente, anfractuum parte superiori rubido-fasciatā.*

THE BANDED TURRITELLA. Shell lanceolately acuminate, very slender, whorls eighteen in number, convex, faintly four-ridged, sutures a little contracted; yellowish, upper part of the whorls banded with dull red.

MENKE, — ?

Hab. Bay of Montija, Central America (in coarse sand at the depth of seven fathoms); Cuming.

Distinguished by its slender erect form and ruddy band beneath the sutures.

Species 48. (Mus. Belcher.)

TURRITELLA FASTIGIATA. *Turr. testā gracillimo-subulatā, tenuiculā, anfractibus octodecim ad viginti, supernè contractis, declivibus, deinde rotundatis, undique subtilissimè liratis et striatis, apicem versus bicarinatis; violaceo alboque pallidè variegatā, strigis fuscescentibus obliquis, liris obscure fusco punctatis vel articulatis.*

THE MINARET TURRITELLA. Shell very slenderly subulate, rather thin, whorls eighteen to twenty in number, contracted round the upper part, slanting, then rounded, very finely ridged and striated, two-keeled towards the apex; variegated with pale violet

and white, and oblique brownish streaks, ridges dotted or articulated with light brown.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas; Belcher.

The oblique clouded streaks of painting are characteristic in this species.

Species 49. (Mus. Cuming.)

TURRITELLA EROSA. *Turr. testā turritā, anfractibus decem ad duodecim, subplano-convexis, spiraliter quadrisulcatis, sulcis angustis, subprofundis; fuscescente, infra suturas albicante.*

THE ERODED TURRITELLA. Shell turreted, whorls ten to twelve in number, rather flatly convex, spirally four-grooved, grooves narrow, rather deep; light brown, whitish beneath the sutures.

COUTHOUY, Bost. Journ. Nat. Hist., vol. ii. p. 103. pl. 3. f. 1.

Hab. Massachusetts Bay, United States (found in stomachs of fishes); Gould, De Kay.

Generally more or less eroded, the apex being semi-transparent and somewhat papillary.

Species 50. (Mus. Belcher.)

TURRITELLA MONILIFERA. *Turr. testā acuminato-pyramidalī, basi depresso-concavā, et acutè angulatā, anfractibus quindecim, carinā latiusculā infra suturas medio concavis, deinde bi-liratis; rosaceo-albā, carinā punctis distantibus obliquis rufescente-fuscis ornatā.*

THE NECKLACE TURRITELLA. Shell acuminately pyramidal, depressly concave and sharply angled at the base, whorls fifteen in number, with a broad keel beneath the sutures, concave in the middle, then two-ridged; pinkish white, keel ornamented with distant oblique red-brown dots.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas; Belcher.

The only painting in this species, beyond its delicate violet-pink hue, consists in the necklace-like row of red-brown dots upon the keel.

Species 51. (Mus. Belcher.)

TURRITELLA OPALINA. *Turr. testā subventricosio-turritā, tenuiculā, anfractibus duodecim, rotundatis, supernè depresso-canaliculatis, sub lente minutissimè creberrimè inciso-striatis; pellucido-albā, fuscescente pallidè concentricè flammata.*

THE OPAL TURRITELLA. Shell somewhat ventricosely turreted, rather thin, whorls twelve in number, rounded, depressly channelled round the upper part, beneath the lens very closely minutely engraved with striæ; opal-white, faintly concentrically flamed with light brown.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas; Belcher.

An extremely interesting species, quite unlike any other.

Species 52. (Mus. Belcher.)

TURRITELLA DECLIVIS. *Turr. testā pyramidalis-turritā, basi plano-angulata, anfractibus octodecim, plano-declivibus, basin versus gradatim latioribus, undique creberrimè subtilissimè undulato-striatis, prope apicem medio plicatis; lutescente-albā, livido-fusco tinctā et apicem versus peculiariter maculatā.*

THE SLANTING TURRITELLA. Shell pyramidally turreted, flatly angled at the base, whorls eighteen in number, flatly slanting, gradually wider towards the base, very closely and finely undulately striated, plicated in the middle towards the apex; yellowish-white, stained with livid brown, and peculiarly spotted towards the apex.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas; Belcher.

In this very interesting species, the livid brown appears in the first few whorls in a necklace of spots beneath the sutures.

Fig. 53. (Mus. Belcher.)

For description of this species, see Genus *Eglisia*, Sp. 3.

Species 54. (Mus. Belcher.)

TURRITELLA MULTILIRATA. *Turr. testā acuminato-turritā, anfractibus supernè contractis, infrà leviter declivibus, infernè canaliculatis, spiraliter multiliratis, liris subtilissimè granulatis; pellucido-albā.*

THE MANY-RIDGED TURRITELLA. Shell acuminate turreted, whorls contracted round the upper part, gently slanting below, channelled round the lower part, spirally many-ridged, ridges very finely granulated; transparent white.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas; Belcher.

An extremely delicate transparent shell.

Species 55. (Mus. Belcher.)

TURRITELLA CONSPERSA. *Turr. testā turritā, anfractibus duodecim, supernè declivibus, deinde tumidis et conspicuè bicarinatis et liratis; lutescente-albā, fuscescente longitudinaliter undulatā et punctatā.*

THE SPRINKLED TURRITELLA. Shell turreted, whorls twelve in number, slanting round the upper part, then swollen and conspicuously two-keeled and ridged; yellowish white, longitudinally waved and dotted with light brown.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas; Belcher.

Delicately mottled throughout with irregular, light brown waved streaks, forming dots here and there next the sutures.



57.



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63.



64.



65.

TURRITELLA.

PLATE XI.

Species 56. (Mus. Belcher.)

TURRITELLA BICOLOR. *Turr. testâ acuminato-turritâ, anfractibus decem ad duodecim, convexis, subtilissimè quadriliratis et striatis, liris distantibus obscure granulatis; aureo-luteâ, suturis lirisque nigrescente-purpureis.*

THE TWO-COLOURED TURRITELLA. Shell acuminate turreted, whorls ten to twelve in number, convex, very finely four-ridged and striated, ridges distant, obscurely granulated; rich yellow, sutures and ridges blackish purple.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas.

In addition to the above characters there are a few puckered obliquely wrinkled striæ next the sutures.

Species 57. (Mus. Belcher.)

TURRITELLA CANALICULATA. *Turr. testâ acuminato-turritâ, anfractibus duodecim, spiraliter acutè sex-liratis et striatis, interstitiis striis obliquis cancellatis, liris tenuibus, duabus inferioribus prominulis; sordidè albâ.*

THE CHANNELLED TURRITELLA. Shell acuminate turreted, whorls twelve in number, spirally sharply six-ridged and striated, interstices cancellated with oblique striæ, ridges thin, the two lower ones rather prominent; dull white.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas.

The two lower ridges, more prominent than the rest, form a spiral channel immediately above the suture.

Species 58. (Mus. Belcher.)

TURRITELLA VITTULATA. *Turr. testâ acuminato-turritâ, basi subconcavâ, anfractibus duodecim, ad suturas contractis, creberrimè spiraliter striatis, striis elevatis, subirregularibus, anfractibus perpaucis primis bicarinatis; fuscescente, striis interruptè castaneis.*

THE FINELY-FILLETED TURRITELLA. Shell acuminate turreted, slightly concave at the base, whorls twelve in number, contracted at the sutures, very closely spirally striated, striæ raised, somewhat irregular, first few whorls two-keeled; light-brown, striæ stained with chestnut here and there in an interrupted manner.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas.

The striæ of this species are not articulated with chestnut, but merely coloured in an irregularly interrupted manner.

Species 59. (Mus. Belcher.)

TURRITELLA CONGELATA. *Turr. testâ acutè subulatâ, basi angulatâ, anfractibus sedecim, convexo-planis, lævibus, obscure triliratis, liris tenuibus, distantibus; pellucido-albâ.*

THE CONGEALED TURRITELLA. Shell sharply subulate, angled at the base, whorls sixteen in number, convexly flattened, smooth, obscurely three-ridged, ridges fine, distant; transparent white.

ADAMS and REEVE, Moll. Voy. Samarang.

Hab. China Seas.

Transparent at the base, but more opaque towards the apex.

Species 60. (Mus. Brit.)

TURRITELLA PAGODA. *Turr. testâ subpyramidal-turritâ, anfractibus quatuordecim, spiraliter acutè liratis, basin versus conspicuè acutè unicostatis, anfractibus perpaucis primis bicostatis, costâ superiori citò evanidâ; albidâ, fulvescente obscure flammâtâ.*

THE PAGODA TURRITELLA. Shell somewhat pyramidal turreted, whorls fourteen to fifteen in number, spirally sharply ridged, conspicuously encircled with a single sharp rib towards the base, first few whorls two-ribbed, the upper one quickly disappearing; whitish, obscurely flamed with light fulvous colour.

Hab. New Zealand; Dr. Sinclair.

Distinctly characterized by its single spiral keel and elegant form; yet intimately allied with the double-keel *T. conspersa*.

Species 61. (Mus. Brit.)

TURRITELLA HOOKERI. *Turr. testâ acuminato-turritâ, tenuiculâ, anfractibus quindecim, medio concavo-tumidis, carinis duabus acutis, remotis, undique conspicuè cingulatis, anfractu ultimo et penultimo subtiliter elevato-striatis; pellucido-albâ.*

June, 1849.

HOOKE'S TURRITELLA. Shell acuminate turreted, rather thin, whorls fifteen in number, concavely swollen in the middle, and conspicuously encircled throughout with two sharp remote keels, last and penultimate whorls finely elevately striated; transparent-white.

Hab. — ?

An extremely interesting species, collected during the Antarctic Expedition by Capt. Sir James Clark Ross, which I have the pleasure to name in honour of Dr. Joseph Hooker, the eminent naturalist of that productive voyage, and author of the 'Flora Antarctica.'

Species 62. (Mus. Cuming.)

TURRITELLA SINUATA. *Turr. testā pyramidalī-acuminatā, anfractibus quatuordecim, planulatis, spiraliter tenuē liratis et striatis, aperturā parviusculā, labro ampliter sinuato; fulvescente, zonulā albidā rufo-punctatā infra suturas.*

THE SINUATED TURRITELLA. Shell pyramidally acuminate, whorls fourteen in number, flattened, spirally finely ridged and striated, aperture rather small, lip largely sinuated; light fulvous colour, having a red-dotted white zone beneath the sutures.

Hab. — ?

Readily distinguished by its dotted painting, and by the broad sinus of the outer lip.

Species 63. (Mus. Cuming.)

TURRITELLA RUBESCENS. *Turr. testā acuminato-turritā, anfractibus tredecim, spiraliter confertim liratis et striatis, primis paucis medio carinatis, carinā cito evanidā; rubescente.*

THE LIGHT-RED TURRITELLA. Shell acuminate turreted,

whorls thirteen in number, spirally closely ridged and striated, the first few whorls keeled in the middle, keel quickly vanishing; light-red.

Hab. Bay of Montija, West Columbia (in coarse sand at the depth of seven fathoms); Cuming.

All the whorls are somewhat prominent in the middle, occupied by the keel in the first few whorls.

Species 64. (Mus. Cuming.)

TURRITELLA CINGULIFERA. *Turr. testā gracili, turritā, anfractibus ad duodecim, supernè contractis, deinde rotundatis, spiraliter elevato-striatis; albā, infra suturas fuscescente.*

THE ENCIRCLED TURRITELLA. Shell slenderly turreted, whorls about twelve in number, contracted round the upper part, then rounded, spirally elevately striated; white, light brown beneath the sutures.

SOWERBY, Tankerville Cat. App. p. 14.

Turritella fragilis, Kiener.

Hab. Port Essington; Jukes.

The light brown colouring immediately beneath the sutures is a prominent character of this species.

Species 65. (Mus. Cuming.)

TURRITELLA INCISA. *Turr. testā subpyramidalī-acuminatā, basi concavo-angulatā, anfractibus duodecim, plano-convexis, spiraliter undique creberrimè inciso-striatis; cinereo-fuscā.*

THE ENGRAVED TURRITELLA. Shell somewhat pyramidally acuminate, concavely angled at the base, whorls twelve in number, flatly convex, spirally very closely marked with engraved striæ; ash-brown.

Hab. Sidney (in deep water); Strange.

Closely but irregularly engraved throughout.

TURRITELLA.

	Plate.	Species.		Plate.	Species.
<i>annulata</i> , Kiener.....	V.	18	<i>Hanleyana</i> , Reeve	VIII.	36
<i>aquilus</i> , Reeve	IX.	46	<i>hastula</i> , Reeve	VII.	31
<i>Archimedis</i> , Mawe	I.	3	<i>Hookeri</i> , Reeve	XI.	61
<i>attenuata</i> , Reeve	I.	4	<i>imbricata</i> , Lam.	V.	19
<i>bacillum</i> , Kiener	II.	7	<i>imbricata</i> (<i>Turbo</i>), Linn.	V.	19
<i>Banksii</i> , Gray	IV.	15	<i>incisa</i> , Reeve	XI.	63 ⁵ .
<i>biangulata</i> , De Blainv.	V.	20	<i>lentiginosa</i> , Reeve	III.	9
<i>bicingulata</i> , Lam.	V.	20	<i>leucostoma</i> , Valenc.	II.	5
<i>bicolor</i> , Adams & Reeve	XI.	56	<i>Ligar</i> , Deshayes	VI.	24
<i>brevialis</i> , Lam.	V.	16	<i>lineolata</i> , Kiener	VIII.	41
<i>Broderipiana</i> , D'Orb.	II.	6	<i>Linnei</i> , Deshayes	VII.	35
<i>canaliculata</i> , Adams & Reeve	XI.	57	<i>maculata</i> , Reeve	VII.	33
<i>candida</i> , Reeve	VIII.	38	<i>marmorata</i> , Kiener	II.	6
<i>carinifera</i> , Lam.	IV.	12	<i>meta</i> , Reeve	VII.	34
<i>cerea</i> , Reeve	VI.	25	<i>monilifera</i> , Adams & Reeve	X.	50
<i>cingulata</i> , Sowerby	VI.	23	<i>multilirata</i> , Adams & Reeve	X.	54
<i>cingulifera</i> , Sowerby	XI.	62	<i>nivea</i> , Gray	IX.	44
<i>clathrata</i> , Kiener	VIII.	37	<i>nodulosa</i> , King	IV.	11
<i>cochlea</i> , Reeve	VII.	29	<i>opalina</i> , Adams & Reeve	X.	51
<i>columnaris</i> , Kiener	IV.	14	<i>pagodus</i> , Reeve	XI.	60
<i>communis</i> , Risso	VII.	35	<i>papillosa</i> , Kiener	IV.	11
<i>congelata</i> , Adams & Reeve	XI.	59	<i>punctata</i> , Kiener	VIII.	39
<i>conspersa</i> , Adams & Reeve	X.	55	<i>radula</i> , Kiener	VII.	30
<i>constricta</i> , Reeve	X.	16	<i>rosea</i> , Quoy	VIII.	41
<i>cornea</i> , Lamarck	VII.	35	<i>rubescens</i> , Reeve	XI.	61 ³ .
<i>crocea</i> , Kiener	VI.	26	<i>sanguinea</i> , Reeve	VI.	27
<i>Cumingii</i> , Reeve	IV.	13	<i>sinuata</i> , Reeve	XI.	60 ² .
<i>declivis</i> , Adams & Reeve	X.	52	<i>spectrum</i> , Reeve	VIII.	40
<i>duplicata</i> (<i>Turbo</i>), Linn.	I.	2	<i>Tasmanica</i> , Reeve	IX.	42
<i>erosa</i> , Couthouy	X.	49	<i>terebra</i> (<i>Turbo</i>), Linn.	I.	3
<i>exoleta</i> (<i>Turbo</i>), Linn.	VI.	22	<i>tigrina</i> , Kiener	III.	8
<i>fascialis</i> , Menke	X.	47	<i>torulosa</i> , Kiener	V.	21
<i>fastigiata</i> , Adams & Reeve	X.	48	<i>tricarinata</i> , King	VI.	23
<i>ferruginea</i> , Reeve	VII.	32	<i>triplicata</i> , Studer	IX.	43
<i>flammulata</i> , Kiener	VI.	24	<i>trisulcata</i> , Lam.	V.	17
<i>fragilis</i> , Kiener	XI.	62 ⁴ .	<i>ungulina</i> , Deshayes	VII.	35
<i>fuscata</i> , Lam.	I.	1.	<i>ungulina</i> (<i>Turbo</i>), Linn.	I.	1
<i>gemmata</i> , Reeve	VI.	28	<i>varia</i> , Kiener	V.	16
<i>goniostoma</i> , Valenc.	III.	10	<i>variegata</i> (<i>Turbo</i>), Linn.	V.	19
<i>Gunnii</i> , Reeve	IX.	45	<i>vittulata</i> , Adams & Reeve	XI.	58

MONOGRAPHS
OF THE GENERA
MESALIA AND EGLISIA.

There is a rapture on the lonely shore,
There is society where none intrudes,
By the deep sea, and music in its roar.—*Byron.*

MONOGRAPH

OF THE

MESSENGER AND ECLIPSE

THESE ARE THE ONLY TWO BOOKS
IN THE WORLD WHICH CONTAIN
THE HISTORY OF THE MESSENGER

Mesalia, Pl. I.



2. a.



1.



2. b.



3.

Eglisia, Pl. I.



2. a.



1.



2. b.

MESALIA.

PLATE I.

Genus MESALIA, Gray.

Testa acuminato-turrita, basi rotundata, columellâ plano-contortâ, recedente, aperturæ margine infra columellam leviter sinuato et reflexo.

Shell acuminately turreted, rounded at the base, columella flatly twisted, receding, margin of the aperture below the columella sinuated and reflected.

The flattened receding structure of the columella of the well-known Senegal *Turritella* (*T. brevis*, Lamarck), *Le Mesal* of Adanson, induced Mr. Gray to found a genus for its reception with the name *Mesalia*, which it is desirable should be adopted.

It is materially distinguished in this respect from the rest of the *Turritellæ*, excepting the little Greenland *T. lactea* of Möller, also a *Mesalia*; and to these may be added a species (*M. Melanioides*) from the Cumingian collection, in which the typical character of the genus is yet more strongly developed, and which Mr. Cuming had already put aside in his cabinet as a new form.

Species 1. (Mus. Brit.)

MESALIA LACTEA. *Mes. testâ turritâ, anfractibus tredecim, longitudinaliter sub-obliquè et obesè plicato-costatis, lineis impressis inter costas, lirâ angustâ infernè funiculatis, aperturâ parvâ; opaco-albâ.*

THE MILK-WHITE MESALIA. Shell turreted, whorls thirteen in number, longitudinally rather obliquely and stoutly plicately ribbed, with impressed lines in the interstices, corded round the lower part with a narrow ridge, aperture small; opake-white.

Turritella lactea, Möller, Index Moll. Grœnlandiæ, p. 9.

Hab. Greenland.

Möller describes this shell as being a diaphanous white, but the specimens in the British Museum are rather opake.

Species 2. (Fig. 2 a, b, Mus. Hanley; and Pl. V.

Fig. 16 a, b, of *Turritella*, Mus. Cuming.)

MESALIA BREVIALIS. *Mes. testâ subabbreviato-turritâ, crassâ, ponderosâ, anfractibus quindecim, rotundatis, supernè obscurè canaliculatis, spiraliter quinqueliratis, liris superioribus fortioribus, inferioribus interdum obsoletis, interstitiis undique subtilissimè et creberrimè striatis, columellâ plano-contortâ, recedente, margine*

subreflexo; albâ, vel cinereo-albâ, vel sordidè olivaceâ, interdum strigis fusciscentibus indistinctè pallidè tinctâ.

THE SHORT MESALIA. Shell somewhat abbreviately turreted, thick, ponderous, whorls fifteen in number, rounded, obscurely channelled round the upper part, spirally five-ridged, upper ridges stronger, lower sometimes obsolete, interstices very finely and closely striated throughout, columella flatly twisted, receding and a little reflected at the edge; white, or ashy-white, or dirty olive, sometimes faintly stained with brownish streaks.

Turritella brevis, Lamarck, Anim. sans vert. (Deshayes' edit.) vol. ix. p. 256.

Le Mesal, Adanson.

Turritella Mesal, Deshayes.

Mesalia sulcata, Gray.

Eadem var. *Turritella varia*, Kiener.

Hab. West Coast of Africa.

An extremely variable species in size and general aspect, but always distinctly characterized throughout by its one idea of sculpture. Each whorl is encircled by nine thread-like ridges, five of which remain exposed to view; of these the two uppermost are more prominently developed than the rest and form a slight channel. The interstices are sculptured throughout with exceedingly fine, close-set, sharply defined striæ. In some specimens the shell is of a dark dirty olive colour and the ridges lighter, others are of a light stone colour without any distinction of tone in the ridges. Of the smaller varieties one is of a dark lead colour, another snowy white and more elongated, with the ridges almost obsolete; and a third equally white with the ridges like so many fine opake threads.

Lamarck, when first describing this species according to the present system of nomenclature, apparently from a worn specimen, did not recognise in it *Le Mesal* of Adanson (Voyage en Sénégal, p. 159. pl. 10. f. 7); and M. Deshayes was unable to identify *Turritella brevis* in his edition of the 'Animaux sans vertèbres' for want of access to the Lamarckian collection, reserved by M. Kiener for the use of his 'Iconographie des coquilles vivantes;' in which work the identification of *T. brevis* with Adanson's *Mesal* has been recently made known.

Unacquainted with Lamarck's *T. brevis*, from his not referring to Adanson's figure, M. Deshayes described *Le Mesal* anew. It is much to be regretted that the learned editor of the 'Anim. sans vert.' was not allowed

access to the Lamarckian types, when engaged on his important edition of that work; either whilst the collection was in the possession of the Duc de Rivoli, under the curatorship of M. Kiener, or subsequently in that of Baron Delessert under the care of M. Chénu. That such was the case M. Deshayes has related to me more than once with much concern.

Species 3. (Mus. Cuming.)

MESALIA MELANIOIDES. *Mes. testâ acuminato-turritâ, basi rotundatâ, anfractibus decem, supernè leviter con-*

cavis, obliquè longitudinaliter plicato-costellatis, striis spiralibus numerosis lirisque subdistantibus decussatis, suturis impressis; albâ, punctis raris rufo-fuscis ornatâ.

THE MELANIA-LIKE MESALIA. Shell acuminate-turreted, rounded at the base, whorls ten in number, slightly concave at the upper part, obliquely longitudinally plicately ribbed, decussated with numerous spiral striæ and distant ridges, sutures impressed; white, ornamented with one or two red-brown dots.

Hab. — ?

The generic peculiarities of *Mesalia* are well-illustrated in this species.

EGLISIA.

PLATE I.

Genus EGLISIA, Gray.

Testa elongato-turrita, anfractibus numerosis, suturis depressis, columellâ plano-incrassatâ, basi quadrato-angulatâ, aperturâ parvâ, rotundatâ, marginibus ferè conjunctis, non reflexis.

Shell elongately turreted, whorls numerous, sutures depressed, columella flatly thickened, squarely angled at the base, aperture small, rounded, margins almost joined, not reflected.

The necessity for instituting a genus for the reception of the *Turritella spirata* of the Tankerville Catalogue, was first made known by Mr. Sowerby in his description of that remarkable shell. "Two circumstances," says the author of the Appendix, Tank. Cat. p. xiv., "are remarkable in this shell, the broad flat depression in the upper part of the volutions, and the straight edge of the outer lip. Aware that it is generically distinguished by this latter circumstance from *Turritella*, we should not have added it to this genus, had there been any more convenient place for it."

Mr. Gray proposed the name *Eglisia*, and I am able to confirm the value of the genus by the addition of two more equally characteristic species, one collected by Mr. Cuming at the Philippine Islands, another dredged by Sir Edward Belcher in the China Seas.

Species 1. (Mus. Cuming.)

EGLISIA SPIRATA. *Egl. testâ pyramidalit-turritâ, anfractibus ad duodecim, supernè peculiariter plano-depressis, ad suturas concavo-excavatis, spiraliter subobtusè liris; albidâ, fulvescente-fusco obliquè inquinatâ et variegatâ.*

THE SPIRAL EGLISIA. Shell pyramidally turreted, whorls about twelve in number, peculiarly flatly depressed round the upper part, concavely excavated at the sutures, spirally somewhat obtusely ridged; whitish, obliquely stained and variegated with fulvous brown.

Turritella spirata, Sowerby, Tankerville Catalogue, App. p. xiv.

Turbo suturalis, Gray (in Wood Index Test.)

Eglisia suturalis, Gray (in Brit. Mus.)

Turritella suturalis, Kiener.

Hab. Island of St. Thomas, West Indies; Sowerby.

I am not aware of any other specimens of this remarkable species, than those spoken of by Mr. Sowerby in the Tankerville Catalogue, as having been purchased in the old collection of Mr. Humphrey. Of these the one here figured is in the Cumingian collection, and another is in the British Museum.

Species 2. (Mus. Cuming.)

EGLISIA LANCEOLATA. *Egl. testâ lanceolato-turritâ, anfractibus ad octodecim, rotundatis, subobscure octoliratis, interstitiis sub lente tenuissimè cancellatis, suturis profundè excavatis, aperturâ parvâ, rotundâ; fulvescente-spadiceâ.*

THE LANCEOLATE EGLISIA. Shell lanceolately turreted, whorls about eighteen in number, rounded, rather obscurely eight-ridged, interstices, beneath the lens, very finely cancellated, sutures deeply excavated, aperture small, rounded; light fulvous bay.

Hab. Pasacao, Island of Luzon (in sandy mud at the depth of ten fathoms); Cuming.

An interesting species collected by Mr. Cuming at the above-named locality, of the same generic type as the preceding, the sutures having the same excavated structure, though in an inferior degree.

Species 3. (Mus. Belcher.)

EGLISIA TRICARINATA. *Egl. testâ acutè turritâ, anfractibus ad octodecim, supernè contractis et declivibus, deinde tricarinatis, sub lente longitudinaliter creberrimè et tenuissimè cancellato-striatis, aperturâ parvâ, rotundâ; sordidè cinereo-fuscâ.*

THE THREE-KEELED EGLISIA. Shell sharply turreted, whorls about eighteen in number, contracted and slanting round the upper part, then three-keeled, beneath the lens very finely longitudinally cancellately striated, aperture small, round; dull ashy-brown.

ADAMS and REEVE, Moll. Voy: Samarang.

Hab. China Seas; Belcher.

The cancellated structure of this species is similar to that of the preceding.

*vide fig. 52.
des Turritella*

I am not aware of any other specimens of this remarkable species than those of the British Museum. The following description is based on the type specimen, which is in the collection of the British Museum.

FIGURE 1. (Life size.)

Length 1.5 mm. Head 0.5 mm. Body 1.0 mm. The body is elongate, tapering towards the head. The head is rounded, with a small, dark, circular spot on the vertex. The eyes are small, dark, and circular. The antennae are short, thick, and cylindrical. The legs are short, thick, and cylindrical. The wings are small, dark, and triangular. The body is covered with a fine, granular texture. The color is a uniform, dark brown.

FIGURE 2. (Life size.)

Length 1.5 mm. Head 0.5 mm. Body 1.0 mm. The body is elongate, tapering towards the head. The head is rounded, with a small, dark, circular spot on the vertex. The eyes are small, dark, and circular. The antennae are short, thick, and cylindrical. The legs are short, thick, and cylindrical. The wings are small, dark, and triangular. The body is covered with a fine, granular texture. The color is a uniform, dark brown.

FIGURE 3. (Life size.)

Length 1.5 mm. Head 0.5 mm. Body 1.0 mm. The body is elongate, tapering towards the head. The head is rounded, with a small, dark, circular spot on the vertex. The eyes are small, dark, and circular. The antennae are short, thick, and cylindrical. The legs are short, thick, and cylindrical. The wings are small, dark, and triangular. The body is covered with a fine, granular texture. The color is a uniform, dark brown.

FIGURE 4. (Life size.)

Length 1.5 mm. Head 0.5 mm. Body 1.0 mm. The body is elongate, tapering towards the head. The head is rounded, with a small, dark, circular spot on the vertex. The eyes are small, dark, and circular. The antennae are short, thick, and cylindrical. The legs are short, thick, and cylindrical. The wings are small, dark, and triangular. The body is covered with a fine, granular texture. The color is a uniform, dark brown.

MONOGRAPH
OF THE GENUS
CASSIDARIA.

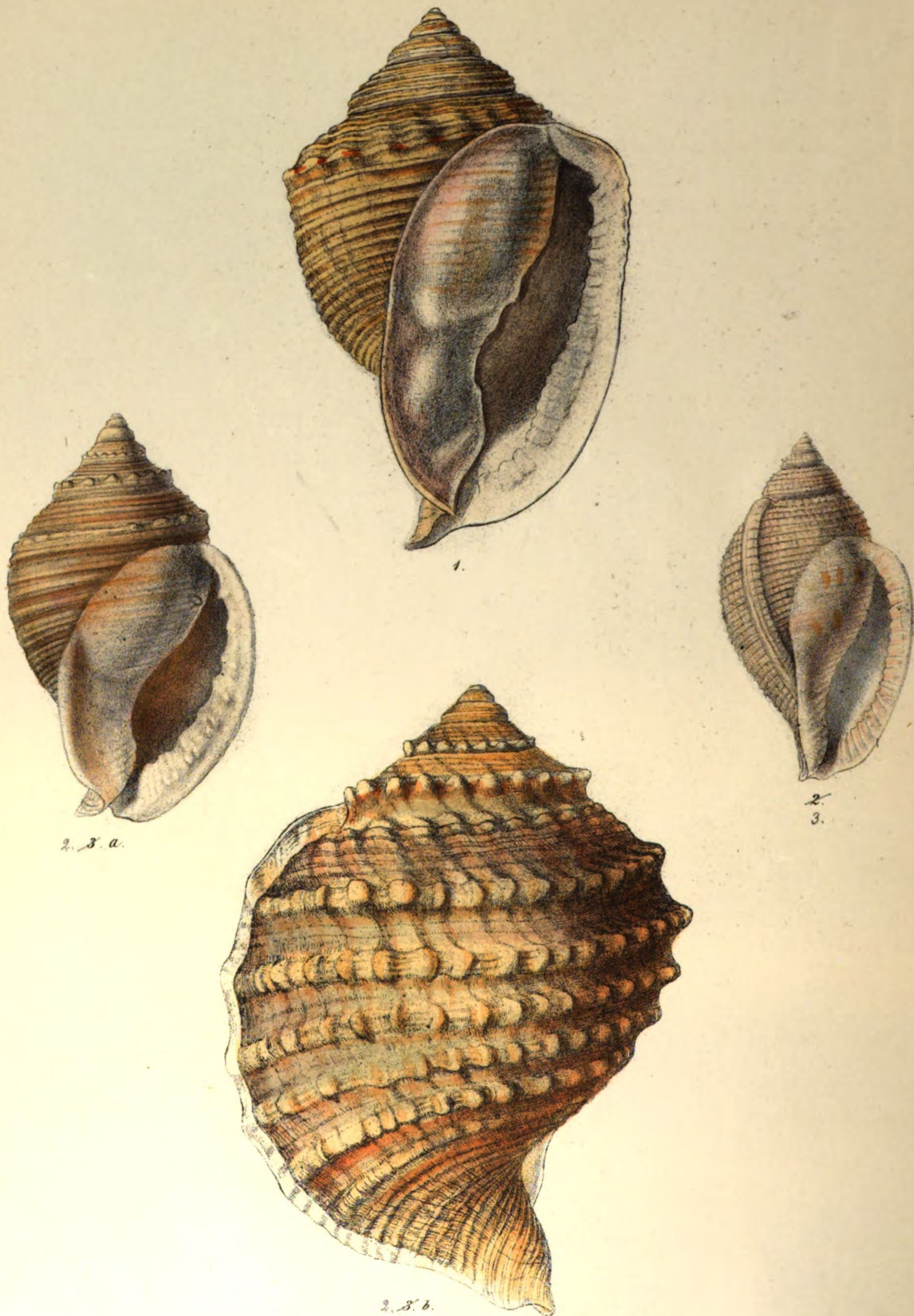
Not lost the time in sea-side ramble spent ;
Braced is the frame, and mental health is gained ;
Knowledge is gained of Him who made the deep,
And blissful love acquired of Nature's works.
Each rock-pool has its treasure, every tide
Strews on the yellow sand from Ocean's lap.—*Landsborough.*

CASSIDARIA

MONOGRAPH

ON THE GENUS

CASSIDARIA.



CASSIDARIA.

PLATE I.

Genus CASSIDARIA, Lamarck.

Testa ovoidea, ventricosa, ad basin attenuata, in canalem curvum, posticè ascendentem, desinens, aperturâ longitudinali, labro columellari lævi, latissimè effuso, labro externo reflexo, intus crenato. Operculum corneum.

Shell ovoid, ventricose, attenuated at the base, ending in a posteriorly ascending recurved canal, aperture longitudinal, columellar lip smooth, very widely effused, outer lip reflected, crenated within. Operculum horny.

The genus *Cassidaria* is one of the very few to which no species have been added since the time of Lamarck. It is, indeed, reduced within narrower limits; for whilst, on the one hand, the researches of Cuming, Quoy, Belcher, D'Orbigny and others, compassing the four quarters of the globe, have failed to discover any new species; the Lamarckian genus has been reduced, on the other hand, by the distribution of two to form the genus *Oniscia*, and of another to the genus *Triton*. Three recent species only remain to the genus, and it is a matter of opinion amongst authors whether two of these, both inhabiting the shores of the Mediterranean, are not varieties of the same specific type.

The *Cassidaria* differs from *Cassis*, to which it is most nearly allied, by its oval inflated growth, projecting spire, and effused aperture, ending in a slightly recurved canal.

The locality of the third species is not known.

Species 1. (Mus. Cuming.)

CASSIDARIA TYRRHENA. *Cass. testâ subpyriformi-ovatâ, supernè ventricosâ, anfractibus liris regularibus undique crebrè funiculatis, ultimo supernè angulato, ad angulum compressè nodoso, supra exiliter obliquè plicato, aperturâ elongato-oblongâ, labris obsoletè crenatis; fulvescente-spadiceâ, aperturâ albâ.*

THE TUSCAN CASSIDARIA. Shell somewhat pyramidally ovate, ventricose round the upper part, whorls closely corded throughout with regular ridges, last whorl angled at the upper part, compressly noded at the angle, faintly obliquely plicated above, aperture elongately oblong, lips obsoletely crenulated; light fulvous bay, aperture white.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vii. p. 8.
Buccinum Tyrrhenum, Chemnitz.

Cassidea Tyrrhena, Bruguière.

Buccinum echinophorum, var. Gmelin.

Buccinum ochroleucum, Gmelin.

Cassidaria echinophora, Deshayes.

Hab. Mediterranean.

Dr. Philippi and M. Deshayes are of opinion that this shell, of which there is an accurate representation in Chemnitz 'Conchylien Cabinet,' vol. x. p. 153. f. 1461-2, is a smooth variety of the well-known *C. echinophora* which follows. It is remarkably distinguished by its angular pyriform growth, and I have not seen any specimen which may be said to represent a state intermediate between this and the commoner form, of which specimens with few or no nodules are frequently mistaken for it.

Species 2. (Fig. a and b, Mus. Cuming.)

CASSIDARIA ECHINOPHORA. *Cass. testâ oviformi, vel globoso-ovatâ, transversim medio costatâ, supra et infra tenuiliratâ, costis planulatis, plus minusve nodosis, lirâ parvâ intermediâ, labro externo subincrassato, intus crenato; fulvescente-albâ, ferrugineo-fusco plus minusve tinctâ.*

THE PRICKLY CASSIDARIA. Shell egg-shaped or globosely ovate, transversely ribbed in the middle, finely ridged above and below, ribs rather flattened, more or less nodose, with a small intermediate ridge, outer lip somewhat thickened, crenated within; light fulvous white, more or less stained with rusty brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 7.

Buccinum echinophorum, Linnæus.

Cassidea echinophora, Bruguière.

Echinora tuberculosa, Schumacher.

Buccinum strigosum, Gmelin.

Buccinum nodosum, Dillwyn.

Cassidaria Tyrrhena, var., Philippi.

Hab. Mediterranean.

The large noded specimen represented at Fig. 2 b, sufficiently shows that the growth of this species is extremely variable; still, I have not observed in any variety the peculiar angulated pear-shape which distinguishes the *C. Tyrrhena*.

Species 3. (Mus. Brit.)

CASSIDARIA STRIATA. *Cass. testâ subpyriformi-ovatâ,*

CASSIDARIA.—PLATE I.

basin versus præcipuè attenuatâ, vix recurvâ, transversim creberrimè elevato-striatâ, striis longitudinalibus incisus versus apicem decussatis, spiræ suturis excavatis, labris incrassatis, intus fortiter crenato-liratis, parum effusis; albâ, interdum fulvescente, supra columellam pallidè fulvescente areolatâ.

THE STRIATED CASSIDARIA. Shell somewhat pyriformly ovate, particularly attenuated towards the base, scarcely recurved, transversely very closely elevately striated, decussated towards the apex with longitu-

dinal engraved striæ, sutures of the spire excavated, lips thickened, strongly crenately ridged within, but little effused: white, sometimes brownish, marked with faint brownish squares above the columella,

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 10.
Hab. — ?

An extremely rare shell, concerning the habitat of which I am unable to procure any information.

MONOGRAPH
OF THE GENUS
ONISCIA.

Under the salt waves bright and clear,
On moss and sand and soft sea-weed,
Lies many a gift of ocean rare.—*Freiligrath.*

MONOGRAPH

OF THE

ONISIA

THE MONOGRAPH OF THE ONISIA
THE MONOGRAPH OF THE ONISIA
THE MONOGRAPH OF THE ONISIA



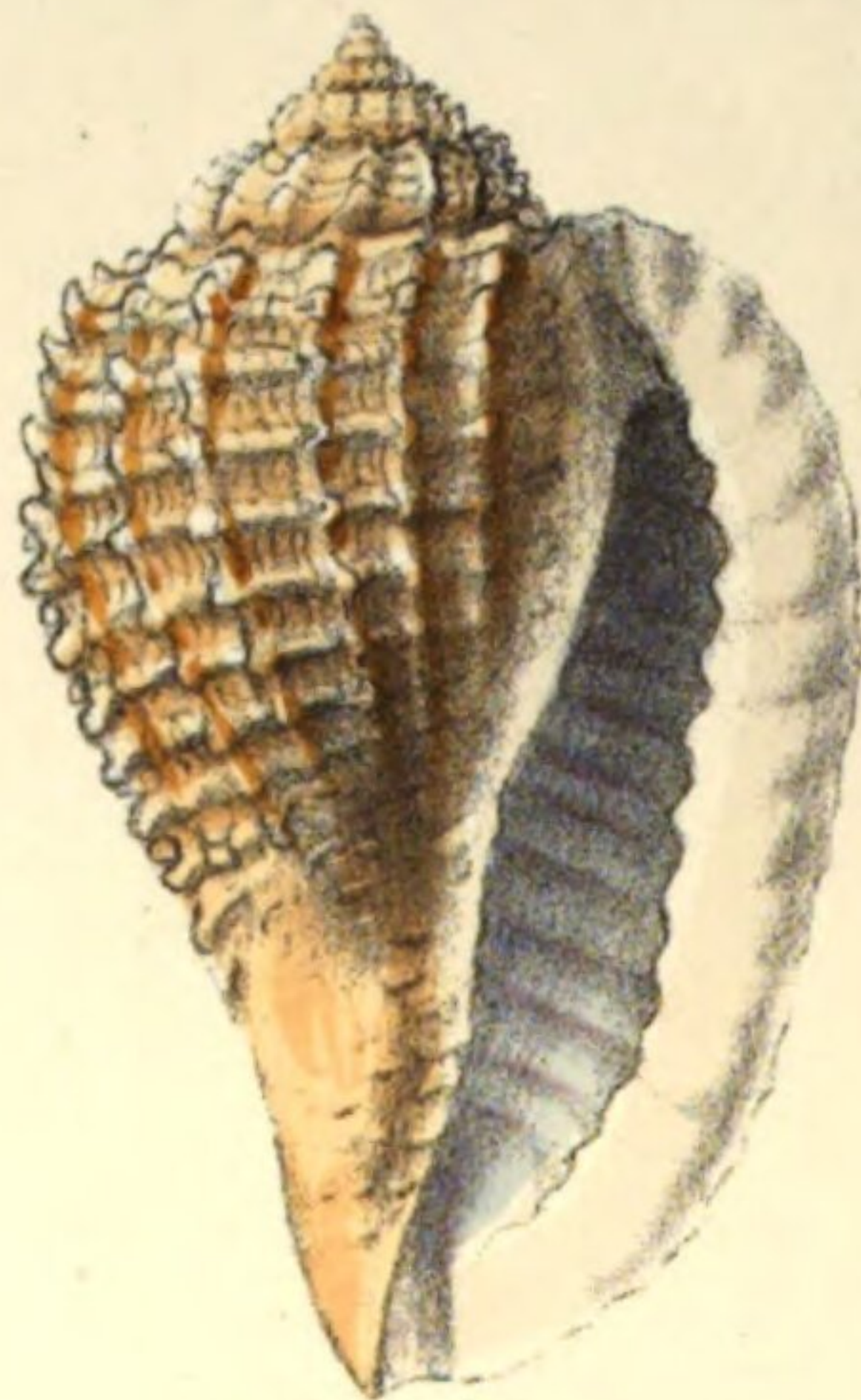
2.



1.



3.



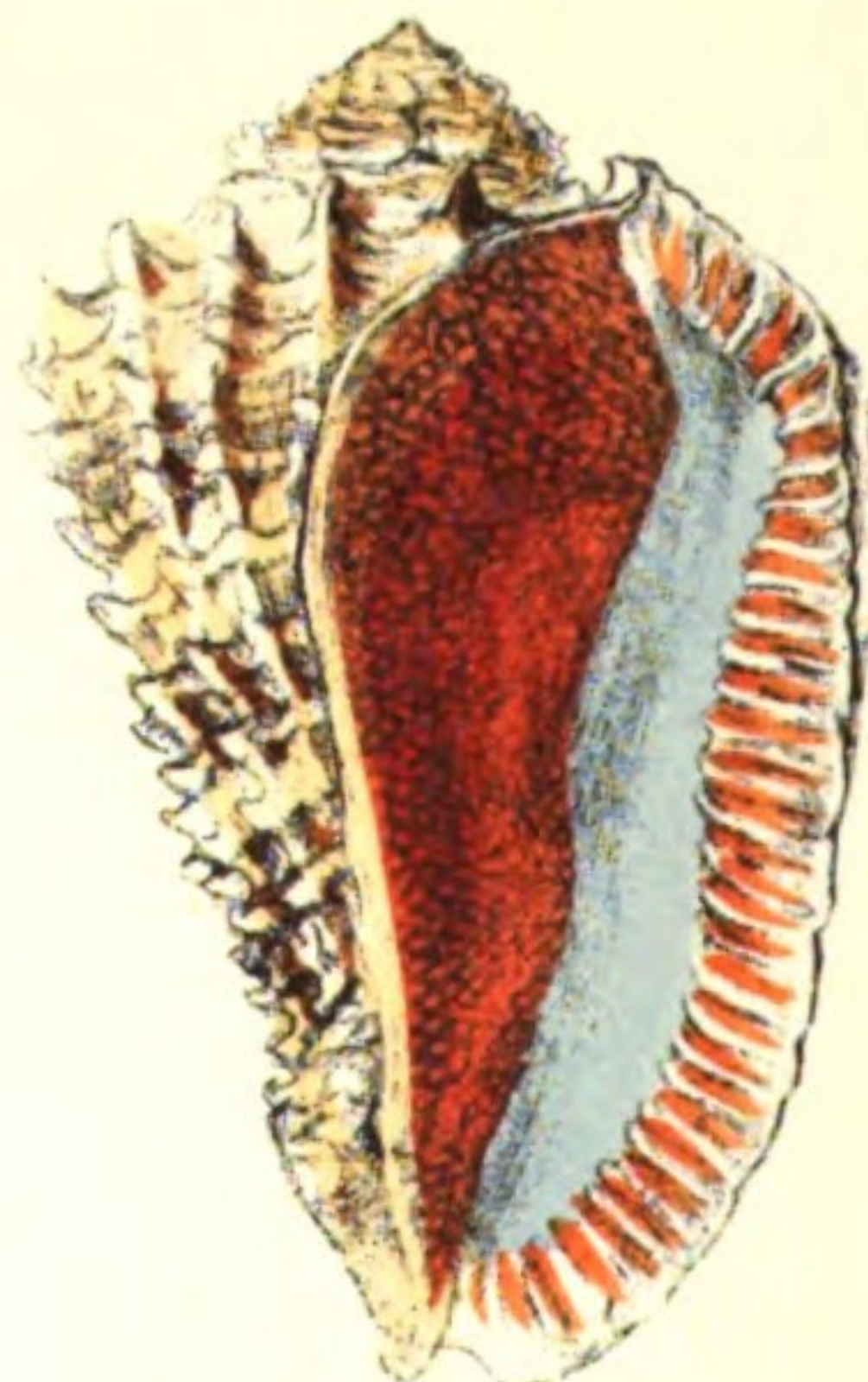
4.



5. a



5. b.



6.

ONISCIA.

PLATE I.

Genus ONISCIA, Sowerby.

Testa oblongo-ovata, basi emarginata, sub-recurva, spirā brevi, nunc acuminatā, nunc depressā, aperturā elongatā, angustā, usque ad spiram extensā, labro columellari latissimè dilatato-reflexo et granulato, labro externo denticulato, incrassato, plerumque medio subcoarctato.

Shell oblong-ovate, emarginated and a little recurved at the base, spire sometimes acuminate, sometimes depressed, aperture elongated, narrow, extending as far as the spire, columellar lip very broadly dilately reflected and granulated, outer lip denticulated, thickened, generally slightly contracted in the middle.

The genus *Oniscia* founded by Mr. Sowerby in his 'Genera of Shells' on the Linnæan *Strombus oniscus* (*Cassidaria oniscus*, Lamarck) has been universally adopted, as representing a very characteristic and well-defined assemblage of characters. They were first remarked on the appearance of the well-known *Oniscia cancellata* of the China Seas, and their importance has been fully confirmed by the discovery of several interesting new species.

The *Oniscie* are closely related to the *Cassidarie*, but are uniformly of smaller size, of more solid growth, with more elaborate sculpture, and remarkably distinguished by a wide-spread dilation of the columellar. The outer lip is also peculiar in being denticulated within.

Of the localities known of the *Oniscie* three are from the Western, two from the Eastern world.

Species 1. (Mus. Cuming.)

ONISCIA ONISCUS. *Onisc. testā oblongo-ovatā, crassā, apice nunc obtusā, nunc mucronatā, costis tribus vel quatuor tuberculatis cinctā, tuberculis interdum bipartitis, labro incrassato, tumido, liris interruptis irregularibus intus denticulato; albidā, maculis perpaucis punctisque numerosis cæruleo-nigris aut fuscis aspersā, labris interdum albis, interdum eximè rosaceis.*

THE WOOD-LOUSE ONISCIA. Shell oblong-ovate, thick, sometimes obtuse, sometimes pointed at the apex, encircled with three or four tuberculated ribs, tubercles sometimes divided into two, lip thickened, swollen, denticulated within with irregular interrupted ridges; whitish, sprinkled with a few spots and numerous dots of brown or blue-black, lips sometimes white, sometimes delicate pink.

SOWERBY, Genera of Shells, *Oniscia*, f. 4.

Strombus oniscus, Linnæus.

Eadem var. *Strombus Lamarckii*, Deshayes.

Hab. Jamaica; Gosse.

The shell selected for illustration is the pink-lip variety to which M. Deshayes has given the name *O. Lamarckii*. The white varieties are usually of smaller dimensions, but the characters are in all respects the same.

Species 2. (Mus. Cuming.)

ONISCIA STROMBIFORMIS. *Onisc. testā subtrigono-pyri-formi, spirā elevatā, apice mucronatā, anfractibus supernè angulatis, costis numerosis angustis nodosis cinctis, labro columellari minutè granulato, labro externo lirato-denticulato, lirā brevi interruptā interveniente; albā, rufo-fusco maculatā et punctatā, labris albis.*

THE STROMBUS-SHAPED ONISCIA. Shell somewhat triangularly pear-shaped, spire elevated, pointed at the apex, whorls angulated round the upper part, encircled with many narrow nodulous ridges, columellar lip minutely granulated, outer lip denticulated with ridges, with a short interrupted ridge in the interstices; white, spotted and dotted with red brown, lips white.

REEVE, Pro. Zool. Soc., 1842. p. 91. Conch. Syst. vol. ii. p. 210. pl. 253. f. 1.

Hab. Honduras; Dyson.

Distinguished from the preceeding species by its slighter growth, more elevated spire, and finely noduled narrow ribs.

Species 3. (Mus. Dennison.)

ONISCIA EXQUISITA. *Onisc. testā subtrigono-ovatā, spirā brevi, acutā, anfractibus supernè concavo-depressis, tuberculis papillaribus undique cingulatis, lirā obscurā interveniente, labro columellari latè expanso, granulis valdè irregularibus, labro externo incrassatim reflexo, liris brevibus dentiformibus irregulariter munito; albidā, aurantio-fusco hic illic sparsim punctatā et pone labrum trimaculatā, labris pallidè purpureo-rosaceis, apice rufo.*

THE EXQUISITE ONISCIA. Shell somewhat triangularly ovate, spire short, sharp, whorls concavely depressed,

encircled throughout with papillary tubercles, with an obscure ridge intervening, columellar lip broadly expanded, granules very irregular, outer lip thickly reflected, furnished with short dentiform ridges; whitish, sparingly dotted, and, behind the lip, three-spotted with orange-brown, lips light purple-pink, apex red.

ADAMS and REEVE, Zool. Voy. Samarang, Moll. pl. 5. fig 3, *a* and *b*.

Hab. Sooloo Archipelago (outside a coral reef near the city of Sooloo, in sandy mud at the depth of from sixteen to twenty fathoms); Belcher.

The surface of this very characteristic species, collected by Captain Sir Edward Belcher during the voyage of the Samarang, is covered with papillary tubercles in rows of about ten, the same number longitudinally as transversely. The columellar and outer lips are delicately enamelled of a livid purplish pink colour.

Species 4. (Mus. Cuming.)

ONISCIA CANCELLATA. *Onisc. testā oblongo-ovatā, basi attenuatā, plus minusve pyriformi, spirā elevatiusculā, acutā, anfractibus supernè rotundatis, longitudinaliter compressè plicatis, costis numerosis angustis crenulatis transversim cancellatis, costis ad juncturas squamatis, labro columellari fortiter granulato, externo fortiter dentato; albidā aut fusciscente-albā, fusco trifasciatā.*

THE CANCELLATED ONISCIA. Shell oblong-ovate, attenuated at the base, more or less pear-shaped, spire rather elevated, sharp, whorls rounded at the upper part, longitudinally compressly plicated, cancellated transversely with numerous narrow crenulated ribs, ribs squamate at the crossing, columellar lip strongly granulated, outer lip strongly toothed; whitish or brownish white, encircled with three brown bands.

SOWERBY, Genera of Shells, *Oniscia*, f. 1 to 3.

Cassidaria cancellata, Kiener (not of Lamarck).

Hab. China Seas.

According to the testimony of M. Deshayes, the fossil *Cassidaria cancellata* of Lamarck is a different species from this, with which it has been usually identified.

Species 5. (Fig. *a* and *b*, Mus. Cuming.)

ONISCIA TUBERCULOSA. *Onisc. testā cylindraceo-oblongā, crassā, spirā nunc convexā, nunc depresso-planā, apice acutè mucronatā, anfractibus quinquecostatis, costis subdistantibus, tuberculatis, interstitiis subtiliter liris,*

labro columellari exiliter granulato, externo medio coarctato, intus denticulato; intensè nigrā, irregulariter albipunctatā, aperturæ fauce albā, interdum vividè croceā.

THE TUBERCLED ONISCIA. Shell cylindrically oblong, thick, spire sometimes convex, sometimes depressly flattened, pointed at the apex, whorls five-ribbed, ribs rather distant, tuberculated, interstices finely ridged, columellar lip faintly granulated, outer lip contracted in the middle, denticulated within; deep black, dotted irregularly with white, interior of the aperture white, sometimes bright saffron.

SOWERBY, Genera of Shells, *Oniscia*, p. 2. Reeve, Conch. Syst. vol. ii. p. 211, pl. 253, f. 2 to 4.

Hab. Fig. *a*. Gallapagos Island (in clefts of rocks at low water); Cuming. Fig. 2 *b*, Gulf of California.

Of the two specimens here figured from Mr. Cuming's collection, that represented at Fig. 5 *a* is but indistinctly granulated, the spire is depressly flattened, and the aperture is of bright saffron colour. In the specimen represented at Fig. 5 *b*, the spire is convexly raised, and there is no indication of colour in the aperture. The granules are numerous, but extremely superficial.

Species 6. (Mus. Dennison.)

ONISCIA DENNISONI. *Onisc. testā trigono-ovatā, spirā acutā, anfractibus supernè angulatis, longitudinaliter compressè plicatis, costis numerosis angustis cancellatis, costis ad juncturas squamatis, labro columellari latè expanso, minutè granulato, externo liris subirregularibus denticulato; albidā, fusco subobscurè tri-quadrifasciatā, labro columellari intensè sanguineo-rutilo, granulis albidis, labro externo rufescente, liris, albidis.*

DENNISON'S ONISCIA. Shell triangularly ovate, spire sharp, whorls angled round the upper part, longitudinally compressly plicated, cancellated with numerous narrow ribs, which are squamate at the crossing, columellar lip broadly expanded, minutely granulated, outer lip denticulated with somewhat irregular ridges; whitish, rather obscurely three- or four-banded, columellar lip very deep blood-red, granules whitish, outer lip light red, with the ridges whitish.

REEVE, Pro. Zool. Soc., 1842. p. 21. Conch. Syst. vol. ii. p. 211. pl. 253. f. 5 and 6.

Hab. — ?

This species approaches very closely in form and detail of sculpture to the *O. cancellata*, but is especially remarkable on account of the intensely red colouring of the columella.

MONOGRAPH
OF THE GENUS
E B U R N A .

Now is it pleasant in the summer eve,
When a broad shore retiring waters leave,
Awhile to wait upon the firm fair sand,
When all is calm at sea, all still on land,
And there the ocean's produce to explore.—*Crabbe.*

MONOGRAPH

OF THE

F B U R N A



EBURNA.

PLATE I.

Genus EBURNA, Lamarck.

Testa ovata vel ovato-conoidea, umbilicata, umbilico amplo, infra canaliculato, interdum impleto, spiræ suturis nunc simplicibus, nunc profundè canaliculatis, aperturâ basi emarginatâ, plerumque supernè canaliculatâ, labro columellari incrassato, calloso, externo simplici. Operculum parvum, acuminatum.

Shell ovate or ovately conoid, umbilicated, umbilicus large, channelled beneath, sometimes filled up, sutures of the spire simple or very deeply channelled, columellar lip thickened, callous, outer lip simple. Operculum small, acuminate.

The name *Eburna*, signifying *ivory*, is not very appropriate for the present genus, inasmuch as it was founded on the polished *E. glabrata* of Lamarck, which proves to be an *Ancillaria*, almost entirely enveloped by the soft parts, whilst the species that remain are distinguished for having a dark thick epidermis. The animal, of which drawings have been published in the Mollusca of the Voyage of the Samarang and of Le Bonite, approaches so near to *Buccinum*, that M. Deshayes is disposed to return rather to the views of Bruguière and Linnæus; it will, however, be readily acknowledged that there is a marked association of generic character in the objects under consideration. They are all largely umbilicated, the umbilicus being sometimes filled up, and are devoid of sculpture. The aperture is alike in all, and the colouring and pattern are peculiar, very similar throughout, yet varying in a manner sufficiently constant in each species to be regarded of considerable specific importance.

It is perhaps scarcely necessary to refer to M. Kiener's remarks that *E. papillosa* and *Valentiana* are varieties of *E. spirata*, and that *E. ambulacrum* is a variety of *E. lutosa* (figured as *E. spirata* var.). This is a grave mistake; the author is not, unfortunately, acquainted with the species. It will also be found on reference to Sp. 4, that the *E. australis* is not identical with Lamarck's *Cancellaria spirata* as generally supposed; whilst *E. plumbea* is referred to the genus *Monoceros*.

The *Eburnæ* are all inhabitants of the Eastern hemisphere.

Species 1. (Mus. Brit.)

EBURNA PAPILLARIS. *Eburn. testâ oblongo-conoideâ, imperforatâ, spirâ elevatâ, apice papillari, suturis sim-*

plicibus, anfractibus subrotundatis, supernè obtusè depressis, vix angulatis; albâ, fusco undique punctatâ.

THE PAPILLARY EBURNA. Shell oblong-conoid, imperforated, spire raised, papillary at the apex, sutures simple, whorls somewhat rounded, obtusely depressed at the upper part, scarcely angulated; white, dotted throughout with brown.

SOWERBY, Tankerville Catalogue, App. p. xxii.

Hab. Cape of Good Hope.

I am only aware of four specimens of this very interesting species; one in the British Museum, one in the Cumingian collection, one in the collection of Mr. Gaskoin, and one in some continental cabinet.

Species 2. (Mus. Cuming.)

EBURNA LUTOSA. *Eburn. testâ ovatâ, vix umbilicatâ, spirâ elevatâ, acutâ, anfractibus convexis, lævibus, supernè obtusè depressis, vix angulatis; albâ, pallidè spadiceo promiscuè undulato-nebulatâ.*

THE MUDDY EBURNA. Shell ovate, scarcely umbilicated, spire raised, sharp, whorls convex, smooth, obtusely depressed above, scarcely angulated; white, promiscuously clouded in a waved manner with light fawn colour.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 235.

Eburna Pacifica, Swainson.

Hab. China.

The colouring obtains a less defined pattern in this species than in any other, and the whorls are more obtusely depressly rounded at the upper part.

Species 3. (Mus. Cuming.)

EBURNA JAPONICA. *Eburn. testâ ovato-conoideâ, umbilicatâ, apice subpapillari, suturis simplicibus, anfractibus convexis, lævibus, supernè vix depressis; albidâ, maculis semilunaribus vel oblongis fulvo-spadiceis, confertis, biseriatim cinctâ, interstitiis maculis parvis numerosis, diagonaliter dispositis, notatis.*

THE JAPAN EBURNA. Shell ovately conoid, umbilicated, somewhat papillary at the apex, sutures simple, whorls convex, smooth, very slightly depressed at the upper part; whitish, encircled with two rows of close-set semilunar or oblong fulvous bay spots, the interstices between which are marked with numerous small spots ranging diagonally.

REEVE, Pro. Zool. Soc. 1842, p. 200; Conch. Syst. pl. 271. f. 1.

Hab. Japan; Dr. Siebold.

Allied in form to *E. Zeylanica*, but less umbilicated, and less sharply acuminate; whilst the design of the painting is very characteristic.

Species 4. (Mus. Cuming.)

EBURNA AUSTRALIS. *Eburn. testā ovatā, imperforatā, spirā breviusculā, suturis latè depresso-canaliculatis, basi leviter sulcatā, sulcis quinque vel sex, deinde sulco unico subprofundo, suprā punctato-striatā, anfractibus quinque; lutescente-albidā, maculis grandibus rufo-fuscis juxta suturas, perpaucis minoribus infrā.*

THE SOUTHERN EBURNA. Shell ovate, imperforated, spire rather short, sutures broadly depressly channelled, sculptured at the base with five or six light grooves, then with a single rather deep one, above striated with fine punctures, whorls five in number; yellowish white, with a row of red-brown spots next the sutures, and a very few smaller ones beneath.

SOWERBY, Conch. Illustrations, f. 5.

Hab. Australia.

The *Eburna australis* has been confounded by many authors with the *Cancellaria spirata* of Lamarck, believing them to be identical. M. Deshayes goes so far as to say that Mr. Sowerby has represented the same shell in two places (Conch. Illus. *Cancellaria*, f. 25 and *Eburna*, f. 5.), suiting the configuration of the columella in each instance to the character of the genus. Such is not the case. The three-plaited *Cancellaria spirata* and the *Eburna australis* are two very distinct shells, the latter being of more solid growth, smooth towards the apex, and furnished with an arched callous columella, characteristic of the genus to which it has been referred in the absence of any more suitable place.

Species 5. (Mus. Cuming.)

EBURNA AMBULACRUM. *Eburn. testā ovatā, umbilicatā, spiræ suturis profundè canaliculatis, anfractibus subplano-convexis, lævibus; albidā, fusciscente-spadiceo creberrimè maculatā et nebulato-tinctā, apice nigricante.*

THE GALLERY EBURNA. Shell ovate, umbilicated, sutures of the spire deeply channelled, whorls rather flatly convex, smooth; whitish, very closely spotted and clouded with brownish bay, apex blackish.

SOWERBY, Tankerville Catalogue, App. p. xxii.

Hab. Isle of Mindanao, Philippines (in sandy mud at the depth of twelve fathoms); Cuming.

Very closely allied to the *E. spirata*, but always readily distinguished by its smaller size, darker colour, and more closely clouded spots.

Species 6. (Mus. Cuming.)

EBURNA AREOLATA. *Eburn. testā ovato-ventricosā, spirā elevatā, profundè et ampliter umbilicatā, convexis, lævibus, supernè obtusè depressis, subcanaliculatis, vix angulatis; albā, maculis rufo-castaneis grandibus oblongo-quadratis subundatis seriatim cinctā.*

THE SQUARE-SPOTTED EBURNA. Shell ovately ventricose, spire elevated, deeply and largely umbilicated, convex, smooth, obtusely depressed round the upper part, slightly channelled, scarcely angulated; white, encircled with rows of large oblong-square slightly waved reddish-chestnut spots.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 235.

Buccinum spiratum var., Bruguière.

Eburna tessellata, Swainson.

Hab. Ceylon.

The spots are disposed in three rows, the lowest being concealed in all but the last whorl, by the superposition of one whorl upon the other.

Species 7. (Mus. Cuming.)

EBURNA SPIRATA. *Eburn. testā ovatā, parum umbilicatā, spirā acutā, suturis profundè canaliculatis, anfractibus subplano-convexis; albā, fulvescente-spadiceo maculatā, maculis medianis minoribus, apice cæruleo-nigricante.*

THE SPIRAL EBURNA. Shell ovate, but little umbilicated, spire sharp, sutures deeply channelled, whorls rather flatly convex; white, spotted with fulvous bay, middle spots the smaller, apex bluish black.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 234.

Buccinum spiratum, Linnæus.

Hab. Ceylon. Philippines.

An interesting variety of this well-known species was collected during the voyage of the Samarang, in which the spots were smaller and of much darker colour.

Species 8. (Mus. Cuming.)

EBURNA ZEYLANICA. *Eburn. testā ovato-conicā, profundè et ampliter umbilicatā, spirā acuminatā, suturis nunquam canaliculatis, anfractibus convexo-declivibus, lævigatis; albā, maculis grandibus sinuatis fulvo-spadiceis*

EBURNA.—PLATE I.

infra suturas, maculis ovatis minoribus medio pictâ, umbilico violascente, apice nigricante.

THE CEYLON EBURNA. Shell ovately conic, deeply and largely umbilicated, spire acuminate, sutures never channelled, whorls convexly slanting, smooth; white, painted beneath the sutures with large sinuated fulvous-bay blotches, in the middle with smaller oval spots of the same colour, umbilicus tinged with violet, apex blackish.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 233.

Buccinum Zeylanicum, Bruguière.

Hab. Ceylon.

Distinguished by its regular conical growth, without the sutures being in any degree canaliculated.

Species 9. (Mus. Cuming.)

EBURNA VALENTIANA. *Eburn. testâ globosâ, crassiusculâ, imperforatâ, spirâ peculiariter demersâ, suturis profundè canaliculatis, apice acuto, anfractibus rotundatis, lævibus; albâ, maculis fulvo-spadiceis, promiscuè longitudinaliter sinuatis et undatis, pictâ.*

VALENTIA'S EBURNA. Shell globose, rather thick, imperforated, spire peculiarly sunk, sutures deeply channelled, apex sharp, whorls rounded, smooth; white, painted with fulvous-bay spots, promiscuously longitudinally sinuated and waved.

SWAINSON, Zoological Illustrations, vol. iii. pl. 144.

Hab. Red Sea.

A very distinct species, named in honour of Lord Valentia, afterwards Earl of Mount Norris.

Reeve, Lovell,

Conchologia iconica: or, illustrations of the shells of molluscous animals

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